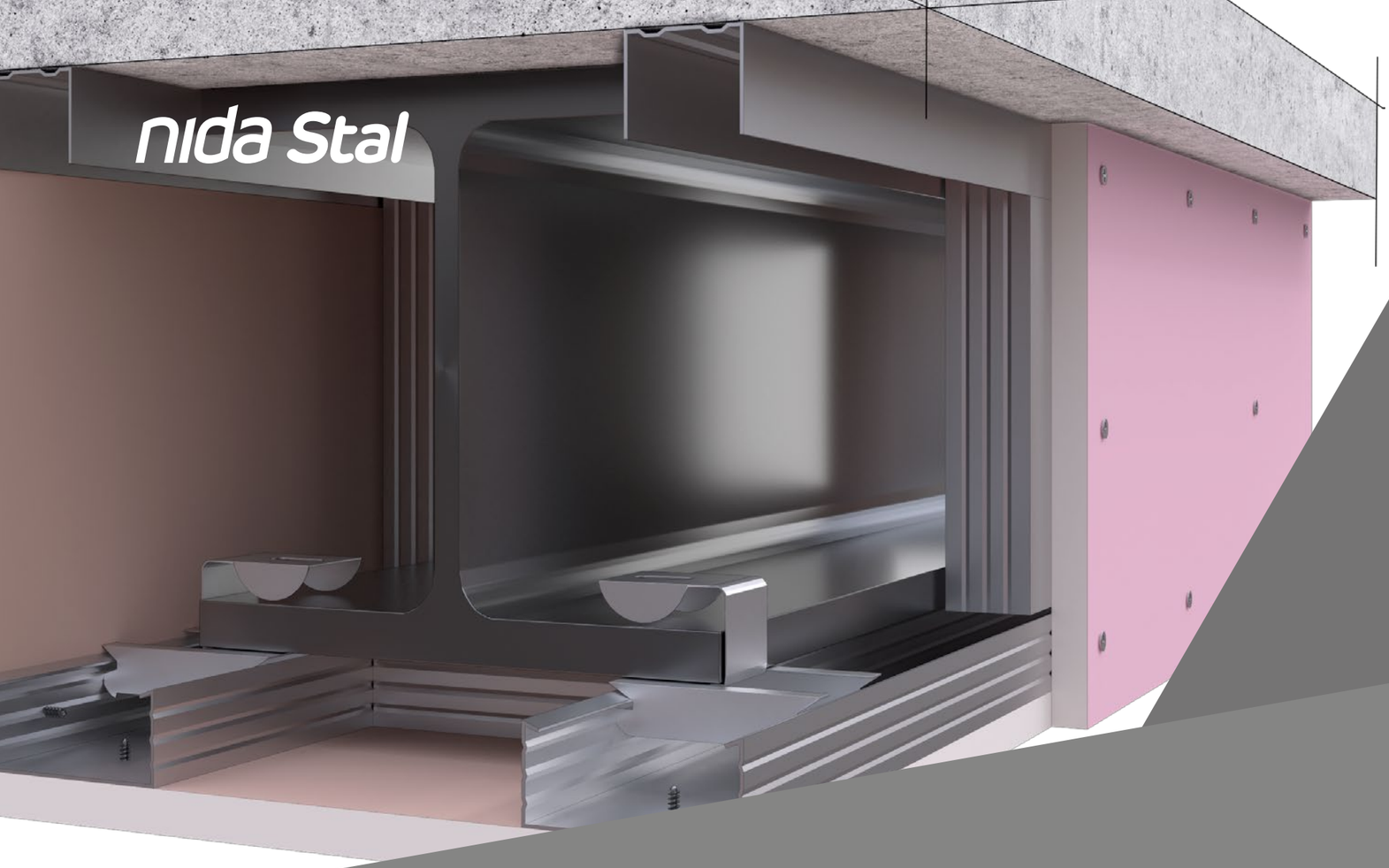


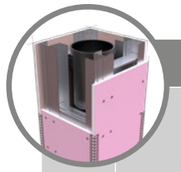
encasements for **steel load-bearing structures**

„The encasement systems for columns and beams are most commonly utilised in order to mask the load-bearing structure of a building. Those systems have two functions: the decorative, which is masking the structural elements, which not always look nice, and the fire-protective - protecting those elements against fire for a defined period of time. The systems of structural elements utilising the Nida Flam Plus (Type DFR), thickness 12.5 mm, or 15 mm, enable providing protection to the steel load-bearing structures, depending on the applied system, up to the fire resistance class R180. Utilisation of other types of plasterboards is acceptable, but its limited to construction of such structures without any fire protection requirements (aesthetic function)."

chapter contents

nida Stal / index of systems

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (COLUMNS)									
1193	4/KM-CD60/15/12,5/Flam+	●	–	–	●	–	12,5	17	550	R15
1193	4/KM-CD60/30/12,5/Flam+	●	–	–	●	–	12,5	17	550	R30
1193	4/KM-CD60/60/12,5/Flam+	●	–	–	●	–	12,5	17	500	R60
1193	4/KM-CD60/30/15/Flam+	●	–	–	–	●	15	20	550	R30
1193	4/KM-CD60/60/15/Flam+	●	–	–	–	●	15	20	500	R60
1193	4/KM-CD60/90/15/Flam+	●	–	–	–	●	15	20	500	R90
1193	4/KM-CD60/120/15/Flam+	●	–	–	–	●	15	20	450	R120
1193	4/CB-MF/15/12,5/Flam+	–	●	–	●	–	12,5	13	550	R15
1193	4/CB-MF/30/12,5/Flam+	–	●	–	●	–	12,5	13	550	R30
1193	4/CB-MF/60/12,5/Flam+	–	●	–	●	–	12,5	13	500	R60
1193	4/CB-MF/30/15/Flam+	–	●	–	–	●	15	16	550	R30
1193	4/CB-MF/60/15/Flam+	–	●	–	–	●	15	16	500	R60
1193	4/CB-MF/90/15/Flam+	–	●	–	–	●	15	16	500	R90



Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
1193	4/CB-MF/120/15/Flam+	–	●	–	–	●	15	16	450	R120
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH ROUND HOLLOW CROSS-SECTIONS (COLUMNS)									
1195	4/C50-U50/15/12,5/Flam+	–	–	●	●	–	12,5	21	550	R15
1195	4/C50-U50/30/12,5/Flam+	–	–	●	●	–	12,5	21	550	R30
1195	4/C50-U50/60/12,5/Flam+	–	–	●	●	–	12,5	21	500	R60
1195	4/C50-U50/30/15/Flam+	–	–	●	–	●	15	24	550	R30
1195	4/C50-U50/60/15/Flam+	–	–	●	–	●	15	24	500	R60
1195	4/C50-U50/90/15/Flam+	–	–	●	–	●	15	24	500	R90
1195	4/C50-U50/120/15/Flam+	–	–	●	–	●	15	24	450	R120

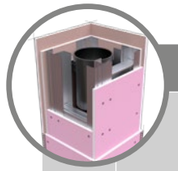
[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (COLUMNS)									
1197	4/KM-CD60/15/12,5/Flam+	●	–	–	●	–	12,5	17	550	R15
1197	4/KM-CD60/30/12,5/Flam+	●	–	–	●	–	12,5	17	550	R30
1197	4/KM-CD60/60/12,5/Flam+	●	–	–	●	–	12,5	17	500	R60
1197	4/KM-CD60/30/15/Flam+	●	–	–	–	●	15	20	550	R30
1197	4/KM-CD60/60/15/Flam+	●	–	–	–	●	15	20	500	R60
1197	4/KM-CD60/90/15/Flam+	●	–	–	–	●	15	20	500	R90
1197	4/KM-CD60/120/15/Flam+	●	–	–	–	●	15	20	450	R120
1197	4/CB-MF/15/12,5/Flam+	–	●	–	●	–	12,5	13	550	R15
1197	4/CB-MF/30/12,5/Flam+	–	●	–	●	–	12,5	13	550	R30
1197	4/CB-MF/60/12,5/Flam+	–	●	–	●	–	12,5	13	500	R60
1197	4/CB-MF/30/15/Flam+	–	●	–	–	●	15	16	550	R30
1197	4/CB-MF/60/15/Flam+	–	●	–	–	●	15	16	500	R60
1197	4/CB-MF/90/15/Flam+	–	●	–	–	●	15	16	500	R90
1197	4/CB-MF/120/15/Flam+	–	●	–	–	●	15	16	450	R120

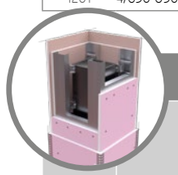
Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (COLUMNS)									
1199	4/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	31	500	R60
1199	4/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	31	500	R90
1199	4/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	31	450	R120
1199	4/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	34	500	R90
1199	4/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	37	500	R90
1199	4/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	37	450	R120
1199	4/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	45	500	R90
1199	4/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	45	450	R120
1199	4/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	47	450	R120
1199	4/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R120
1199	4/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R180
1199	4/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	26	500	R60
1199	4/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	26	500	R90
1199	4/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	26	450	R120
1199	4/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	29	500	R90
1199	4/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	31	500	R90
1199	4/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	31	450	R120
1199	4/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	38	500	R90
1199	4/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	38	450	R120
1199	4/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	41	450	R120
1199	4/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R120
1199	4/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES



Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH ROUND HOLLOW CROSS-SECTIONS (COLUMNS)									
1201	4/C50-U50/60/25/Flam+	–	–	●	●	–	2x12,5	35	500	R60
1201	4/C50-U50/90/25/Flam+	–	–	●	●	–	2x12,5	35	500	R90
1201	4/C50-U50/120/25/Flam+	–	–	●	●	–	2x12,5	35	450	R120
1201	4/C50-U50/90/27,5/Flam+	–	–	●	●	●	12,5 +15	38	500	R90
1201	4/C50-U50/90/30/Flam+	–	–	●	–	●	2x15	41	500	R90
1201	4/C50-U50/120/30/Flam+	–	–	●	–	●	2x15	41	450	R120
1201	4/C50-U50/90/37,5/Flam+	–	–	●	●	–	3x12,5	49	500	R90
1201	4/C50-U50/120/37,5/Flam+	–	–	●	●	–	3x12,5	49	450	R120
1201	4/C50-U50/120/40/Flam+	–	–	●	●	●	2x12,5 + 15	52	450	R120
1201	4/C50-U50/120/42,5/Flam+	–	–	●	●	●	2x15 + 12,5	55	450	R120
1201	4/C50-U50/180/42,5/Flam+	–	–	●	●	●	2x15 + 12,5	55	450	R180



Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (COLUMNS)									
1203	4/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	31	500	R60
1203	4/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	31	500	R90
1203	4/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	31	450	R120
1203	4/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	34	500	R90
1203	4/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	37	500	R90
1203	4/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	37	450	R120
1203	4/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	45	500	R90
1203	4/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	45	450	R120
1203	4/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	47	450	R120
1203	4/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R120
1203	4/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R180
1203	4/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	26	500	R60
1203	4/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	26	500	R90
1203	4/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	26	450	R120
1203	4/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	29	500	R90
1203	4/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	31	500	R90
1203	4/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	31	450	R120
1203	4/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	38	500	R90
1203	4/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	38	450	R120
1203	4/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	41	450	R120
1203	4/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R120
1203	4/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (BEAMS)									
1205	3/KM-CD60/15/12,5/Flam+	●	–	–	●	–	12,5	12	550	R15
1205	3/KM-CD60/30/12,5/Flam+	●	–	–	●	–	12,5	12	550	R30
1205	3/KM-CD60/60/12,5/Flam+	●	–	–	●	–	12,5	12	500	R60
1205	3/KM-CD60/30/15/Flam+	●	–	–	–	●	15	14	550	R30
1205	3/KM-CD60/60/15/Flam+	●	–	–	–	●	15	14	500	R60
1205	3/KM-CD60/90/15/Flam+	●	–	–	–	●	15	14	500	R90
1205	3/KM-CD60/120/15/Flam+	●	–	–	–	●	15	14	450	R120
1205	3/CB-MF/15/12,5/Flam+	–	●	–	●	–	12,5	10	550	R15
1205	3/CB-MF/30/12,5/Flam+	–	●	–	●	–	12,5	10	550	R30
1205	3/CB-MF/60/12,5/Flam+	–	●	–	●	–	12,5	10	500	R60
1205	3/CB-MF/30/15/Flam+	–	●	–	–	●	15	12	550	R30
1205	3/CB-MF/60/15/Flam+	–	●	–	–	●	15	12	500	R60
1205	3/CB-MF/90/15/Flam+	–	●	–	–	●	15	12	500	R90
1205	3/CB-MF/120/15/Flam+	–	●	–	–	●	15	12	450	R120

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (BEAMS)									
1207	3/KM-CD60/15/12,5/Flam+	●	–	–	●	–	12,5	12	550	R15
1207	3/KM-CD60/30/12,5/Flam+	●	–	–	●	–	12,5	12	550	R30
1207	3/KM-CD60/60/12,5/Flam+	●	–	–	●	–	12,5	12	500	R60
1207	3/KM-CD60/30/15/Flam+	●	–	–	–	●	15	14	550	R30
1207	3/KM-CD60/60/15/Flam+	●	–	–	–	●	15	14	500	R60
1207	3/KM-CD60/90/15/Flam+	●	–	–	–	●	15	14	500	R90
1207	3/KM-CD60/120/15/Flam+	●	–	–	–	●	15	14	450	R120
1207	3/CB-MF/15/12,5/Flam+	–	●	–	●	–	12,5	10	550	R15
1207	3/CB-MF/30/12,5/Flam+	–	●	–	●	–	12,5	10	550	R30
1207	3/CB-MF/60/12,5/Flam+	–	●	–	●	–	12,5	10	500	R60
1207	3/CB-MF/30/15/Flam+	–	●	–	–	●	15	12	550	R30
1207	3/CB-MF/60/15/Flam+	–	●	–	–	●	15	12	500	R60
1207	3/CB-MF/90/15/Flam+	–	●	–	–	●	15	12	500	R90
1207	3/CB-MF/120/15/Flam+	–	●	–	–	●	15	12	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (BEAMS)									
1209	3/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	22	500	R60
1209	3/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	22	500	R90
1209	3/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	22	450	R120
1209	3/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	24	500	R90
1209	3/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	26	500	R90
1209	3/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	26	450	R120
1209	3/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	32	500	R90
1209	3/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	32	450	R120
1209	3/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	34	450	R120
1209	3/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	37	450	R120
1209	3/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	37	450	R180
1209	3/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	19	500	R60
1209	3/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	19	500	R90
1209	3/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	19	450	R120
1209	3/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	21	500	R90
1209	3/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	23	500	R90
1209	3/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	23	450	R120
1209	3/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	28	500	R90
1209	3/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	28	450	R120
1209	3/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	30	450	R120
1209	3/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	32	450	R120
1209	3/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	32	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

Page	Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrange-ment	Weight of 1 linear metre of encase-ment [1]	Critical tem-perature	Fire resistance class [2]
		KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
	THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (BEAMS)									
1211	3/KM-CD60/60/25/Flam+	●	–	–	●	–	2x12,5	22	500	R60
1211	3/KM-CD60/90/25/Flam+	●	–	–	●	–	2x12,5	22	500	R90
1211	3/KM-CD60/120/25/Flam+	●	–	–	●	–	2x12,5	22	450	R120
1211	3/KM-CD60/90/27,5/Flam+	●	–	–	●	●	12,5 +15	24	500	R90
1211	3/KM-CD60/90/30/Flam+	●	–	–	–	●	2x15	26	500	R90
1211	3/KM-CD60/120/30/Flam+	●	–	–	–	●	2x15	26	450	R120
1211	3/KM-CD60/90/37,5/Flam+	●	–	–	●	–	3x12,5	32	500	R90
1211	3/KM-CD60/120/37,5/Flam+	●	–	–	●	–	3x12,5	32	450	R120
1211	3/KM-CD60/120/40/Flam+	●	–	–	●	●	2x12,5 + 15	34	450	R120
1211	3/KM-CD60/120/42,5/Flam+	●	–	–	●	●	2x15 + 12,5	37	450	R120
1211	3/CB-MF/60/25/Flam+	–	●	–	●	–	2x12,5	19	500	R60
1211	3/CB-MF/90/25/Flam+	–	●	–	●	–	2x12,5	19	500	R90
1211	3/CB-MF/120/25/Flam+	–	●	–	●	–	2x12,5	19	450	R120
1211	3/CB-MF/90/27,5/Flam+	–	●	–	●	●	12,5 +15	22	500	R90
1211	3/CB-MF/90/30/Flam+	–	●	–	–	●	2x15	23	500	R90
1211	3/CB-MF/120/30/Flam+	–	●	–	–	●	2x15	23	450	R120
1211	3/CB-MF/90/37,5/Flam+	–	●	–	●	–	3x12,5	28	500	R90
1211	3/CB-MF/120/37,5/Flam+	–	●	–	●	–	3x12,5	28	450	R120
1211	3/CB-MF/120/40/Flam+	–	●	–	●	●	2x12,5 + 15	30	450	R120
1211	3/CB-MF/120/42,5/Flam+	–	●	–	●	●	2x15 + 12,5	32	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R15–R120**

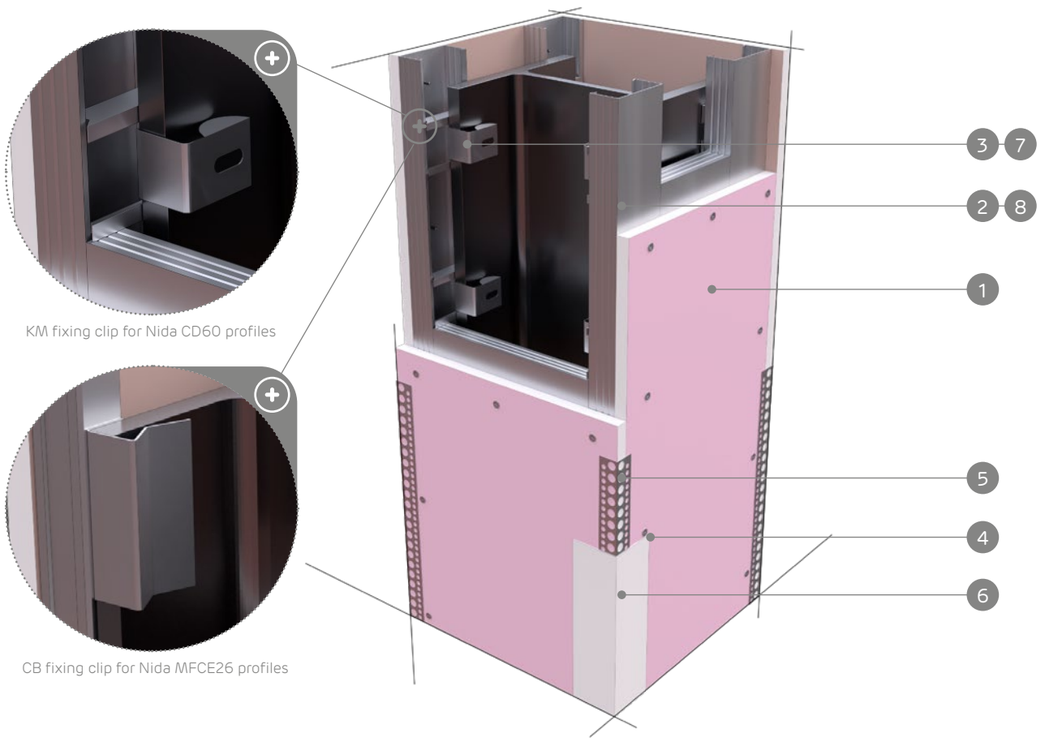
Weight of 1 linear metre of encasement: **13,0–20,0 kg**

Number of related document: **ITB fire classification**

ITB fire classification: **ITB 1060/18/R125NZP**

SYSTEMS:

4/KM-CD60/12,5; 4/KM-CD60/15; 4/CB-MF/12,5; 4/CB-MF/15;

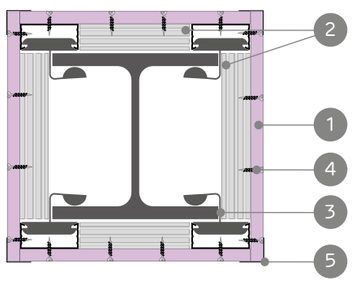


KM fixing clip for Nida CD60 profiles

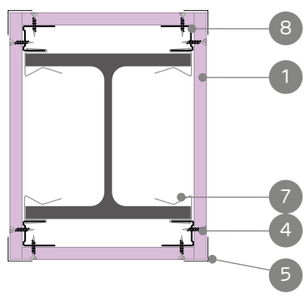
CB fixing clip for Nida MFCE26 profiles

MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. KM fixing clip for Nida CD60 profiles
4. Nida sheet metal screws
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. CB fixing clip for Nida MFCE26 profiles
8. Nida MFCE26 profile



KM fixing clip for Nida CD60 profiles



CB fixing clip for Nida MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/KM-CD60/15/12,5/Flam+	●	-	-	●	-	12,5	17	550	R15
4/KM-CD60/30/12,5/Flam+	●	-	-	●	-	12,5	17	550	R30
4/KM-CD60/60/12,5/Flam+	●	-	-	●	-	12,5	17	500	R60
4/KM-CD60/30/15/Flam+	●	-	-	-	●	15	20	550	R30
4/KM-CD60/60/15/Flam+	●	-	-	-	●	15	20	500	R60
4/KM-CD60/90/15/Flam+	●	-	-	-	●	15	20	500	R90
4/KM-CD60/120/15/Flam+	●	-	-	-	●	15	20	450	R120
4/CB-MF/15/12,5/Flam+	-	●	-	●	-	12,5	13	550	R15
4/CB-MF/30/12,5/Flam+	-	●	-	●	-	12,5	13	550	R30
4/CB-MF/60/12,5/Flam+	-	●	-	●	-	12,5	13	500	R60
4/CB-MF/30/15/Flam+	-	●	-	-	●	15	16	550	R30
4/CB-MF/60/15/Flam+	-	●	-	-	●	15	16	500	R60
4/CB-MF/90/15/Flam+	-	●	-	-	●	15	16	500	R90
4/CB-MF/120/15/Flam+	-	●	-	-	●	15	16	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal			
		4/KM-CD60/12,5	4/KM-CD60/15	4/CB-MF/12,5	4/CB-MF/15
		Consumption of material per 1 linear metre			
Nida Flam Plus 12.5 mm plasterboard	m^2	x+0,3	-	x+0,15	-
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3	-	x+0,15
Nida CD60 profile	lm	(0,9x+4,0)	(0,9x+4,0)	-	-
Nida MFCE26 profile	lm	-	-	4,0	4,0
KM fixing clip for CD60 profile	pcs.	5	5	-	-
CB fixing clip for MFCE26 profile	pcs.	-	-	7,0	7,0
Nida 3,5x25 mm sheet metal screws	pcs.	48	48	48	48
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [3]	kg	0,9 [4]	0,9 [4]	0,9 [4]	0,9 [4]
Nida perforated aluminium corner profile	lm	4	4	4	4

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: R15–R120

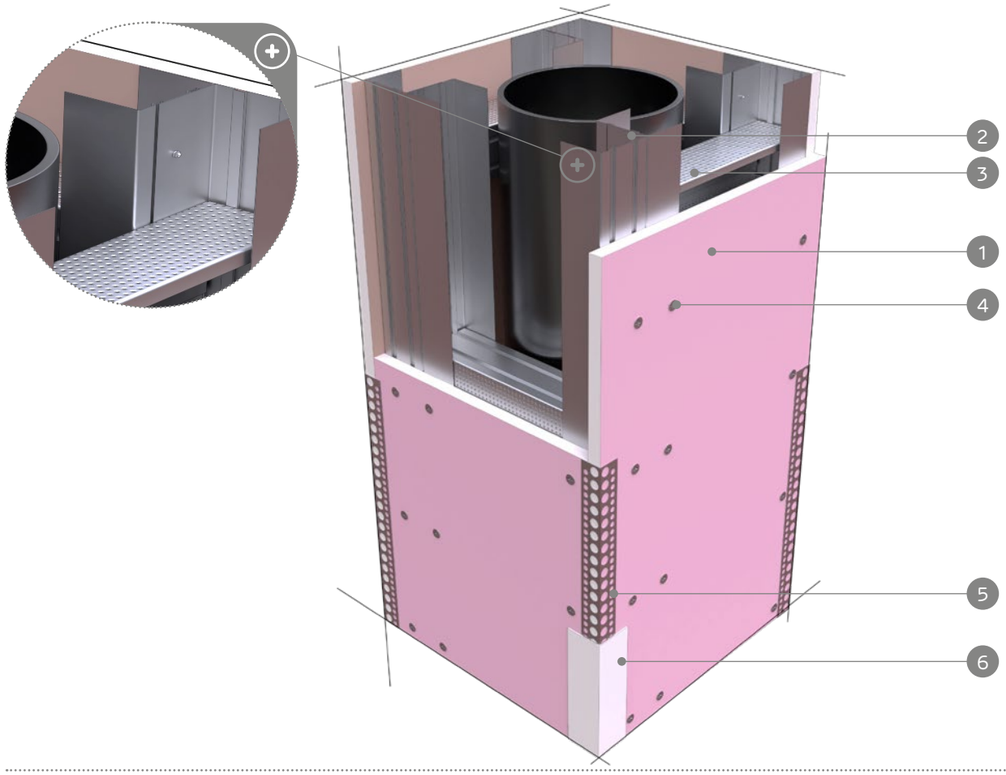
Weight of 1 linear metre of encasement: 21,0–24,0 kg

Number of related document: ITB fire classification

ITB fire classification: ITB 1060/18/R125NZP

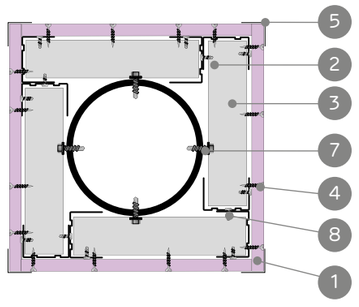
SYSTEMS:

4/C50-U50/12,5; 4/C50-U50/15



MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida U50 profile
3. Nida C50 profile
4. Nida sheet metal screws
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. Self-drilling screw with hexagonal head
8. FLAT HEAD 4.2x13 mm self-drilling screws for 1 mm sheet metal



THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH ROUND HOLLOW CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [1]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/C50-U50/15/12,5/Flam+	-	-	●	●	-	12,5	21	550	R15
4/C50-U50/30/12,5/Flam+	-	-	●	●	-	12,5	21	550	R30
4/C50-U50/60/12,5/Flam+	-	-	●	●	-	12,5	21	500	R60
4/C50-U50/30/15/Flam+	-	-	●	-	●	15	24	550	R30
4/C50-U50/60/15/Flam+	-	-	●	-	●	15	24	500	R60
4/C50-U50/90/15/Flam+	-	-	●	-	●	15	24	500	R90
4/C50-U50/120/15/Flam+	-	-	●	-	●	15	24	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal [5]	
		4/C50-U50/12,5	4/C50-U50/15
		Consumption of material per 1 linear metre	
Nida Flam Plus 12.5 mm plasterboard	m^2	x+0,3	-
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3
Profil Nida C50	lm	1,1x	1,1x
Profil Nida U50	lm	8	8
FLAT HEAD 4.2x13 mm self-drilling screws for 1 mm sheet metal	pcs.	16	16
Nida 3,5x25 mm sheet metal screws	pcs.	48	48
Nida reinforcement tape	lm	0,9x	0,9x
Nida Max gypsum putty [3]	kg	0,9 [4]	0,9 [4]
Nida perforated aluminium corner profile	lm	4	4

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
[5] Anchoring of the Nida sub-structure to the encased steel structure takes place with utilisation of self-drilling screws for sheet metal selected appropriately for the profile thickness.
IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R15–R120**

Weight of 1 linear metre of encasement: **13,0–20,0 kg**

Number of related document: **ITB fire classification**

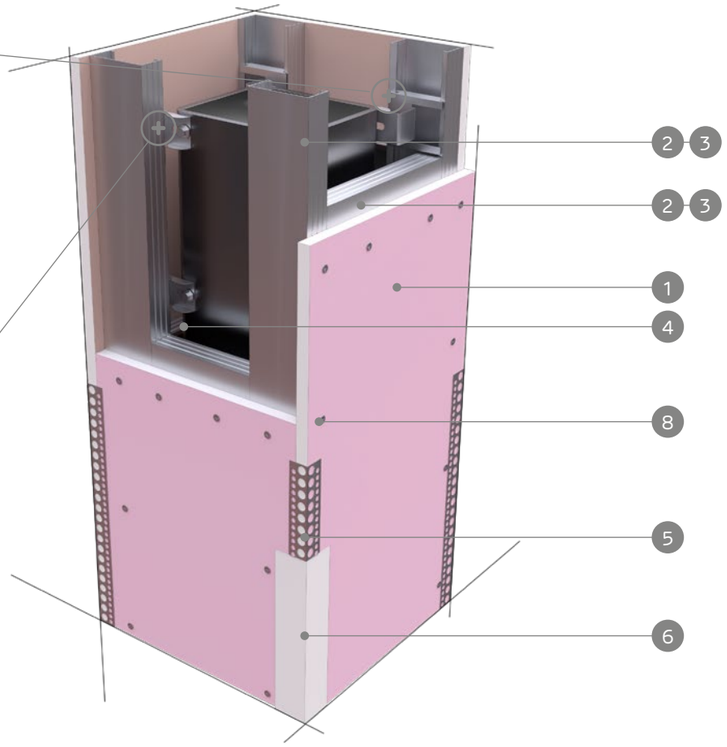
ITB fire classification: **ITB 1060/18/R125NZP**

SYSTEMS:

4/KM-CD60/12,5; 4/KM-CD60/15; 4/CB-MF/12,5; 4/CB-MF/15

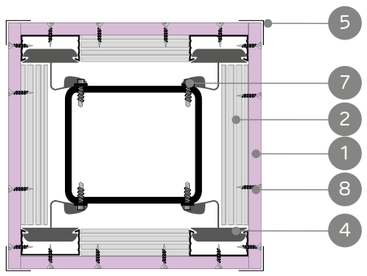
KM fixing clip for Nida CD60 profiles

Fixing of MFCE26 profiles

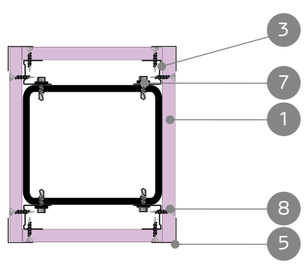


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida MFCE26 profile
4. KM fixing clip for Nida CD60 profiles
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. Self-drilling screw with hexagonal head
8. Nida sheet metal screws



KM fixing clip for Nida CD60 profiles



Fixing of MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/KM-CD60/15/12,5/Flam+	●	-	-	●	-	12,5	17	550	R15
4/KM-CD60/30/12,5/Flam+	●	-	-	●	-	12,5	17	550	R30
4/KM-CD60/60/12,5/Flam+	●	-	-	●	-	12,5	17	500	R60
4/KM-CD60/30/15/Flam+	●	-	-	-	●	15	20	550	R30
4/KM-CD60/60/15/Flam+	●	-	-	-	●	15	20	500	R60
4/KM-CD60/90/15/Flam+	●	-	-	-	●	15	20	500	R90
4/KM-CD60/120/15/Flam+	●	-	-	-	●	15	20	450	R120
4/CB-MF/15/12,5/Flam+	-	●	-	●	-	12,5	13	550	R15
4/CB-MF/30/12,5/Flam+	-	●	-	●	-	12,5	13	550	R30
4/CB-MF/60/12,5/Flam+	-	●	-	●	-	12,5	13	500	R60
4/CB-MF/30/15/Flam+	-	●	-	-	●	15	16	550	R30
4/CB-MF/60/15/Flam+	-	●	-	-	●	15	16	500	R60
4/CB-MF/90/15/Flam+	-	●	-	-	●	15	16	500	R90
4/CB-MF/120/15/Flam+	-	●	-	-	●	15	16	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal			
		4/KM-CD60/12,5	4/KM-CD60/15	4/CB-MF/12,5	4/CB-MF/15
		Consumption of material per 1 linear metre			
Nida Flam Plus 12.5 mm plasterboard	m^2	x+0,3	-	x+0,15	-
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3	-	x+0,15
Nida CD60 profile	lm	(0,9x+4,0)	(0,9x+4,0)	-	-
Nida MFCE26 profile	lm	-	-	4,0	4,0
KM fixing clip for CD60 profile	pcs.	5	5	-	-
Nida 3,5x25 mm sheet metal screws	pcs.	48	48	48	48
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [3]	kg	0,9 [4]	0,9 [4]	0,9 [4]	0,9 [4]
Nida perforated aluminium corner profile	lm	4	4	4	4

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R60–R180**

Weight of 1 linear metre of encasement: **26,0–50,0 kg**

Number of related document: **ITB fire classification**

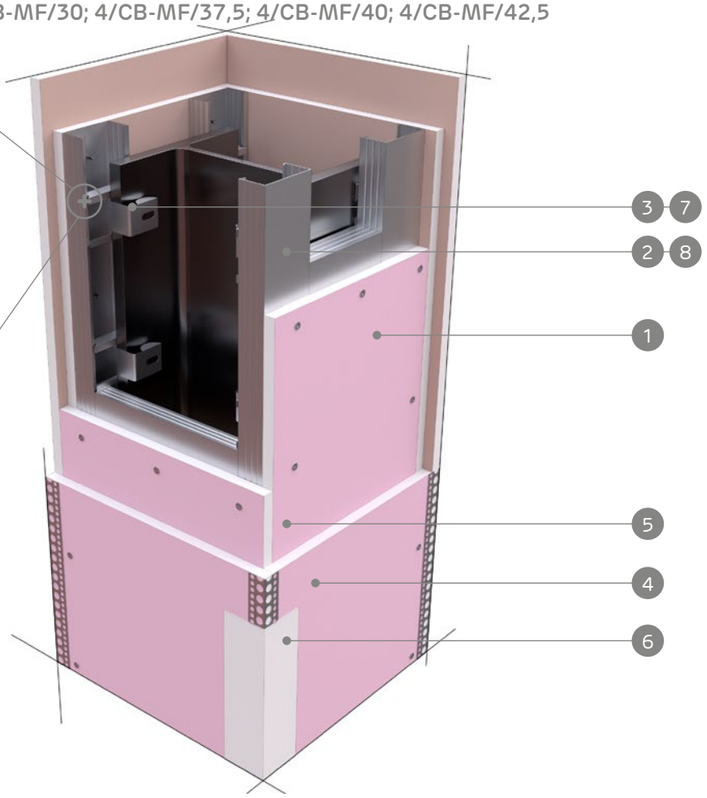
ITB fire classification: **ITB 1060/18/R125NZP**

SYSTEMS:

4/KM-CD60/25; 4/KM-CD60/27,5; 4/KM-CD60/30; 4/KM-CD60/37,5; 4/KM-CD60/40; 4/KM-CD60/42,5; 4/CB-MF/25; 4/CB-MF/27,5; 4/CB-MF/30; 4/CB-MF/37,5; 4/CB-MF/40; 4/CB-MF/42,5

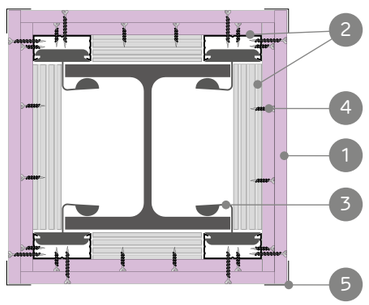
KM fixing clip for Nida CD60 profiles

CB fixing clip for Nida MFCE26 profiles

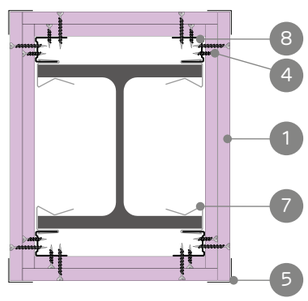


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. KM fixing clip for Nida CD60 profiles
4. Nida sheet metal screws
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. CB fixing clip for Nida MFCE26 profiles
8. Nida MFCE26 profile



KM fixing clip for Nida CD60 profiles



CB fixing clip for Nida MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	31	500	R60
4/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	31	500	R90
4/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	31	450	R120
4/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	34	500	R90
4/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	37	500	R90
4/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	37	450	R120
4/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	45	500	R90
4/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	45	450	R120
4/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	47	450	R120
4/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R120
4/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R180
4/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	26	500	R60
4/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	26	500	R90
4/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	26	450	R120
4/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	29	500	R90
4/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	31	500	R90
4/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	31	450	R120
4/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	38	500	R90
4/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	38	450	R120
4/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	41	450	R120
4/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R120
4/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal											
		4/KM--CD60/25	4/KM--CD60/27,5	4/KM--CD60/30	4/KM--CD60/37,5	4/KM--CD60/40	4/KM--CD60/42,5	4/CB--MF/25	4/CB--MF/27,5	4/CB--MF/30	4/CB--MF/37,5	4/CB--MF/40	4/CB--MF/42,5
		Consumption of material per 1 linear metre											
Nida Flam Plus 12.5 mm plasterboard	m^2	2x+0,6	x+0,3	-	3x+0,9	2x+0,6	x+0,3	2x+0,3	x+0,15	-	3x+0,45	2x+0,3	x+0,15
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3	2x+0,6	-	x+0,3	2x+0,6	-	x+0,15	2x+0,3	-	x+0,15	2x+0,3
Nida CD60 profile	lm	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	-	-	-	-	-	-
Nida MFCE26 profile	lm	-	-	-	-	-	-	4,0	4,0	4,0	4,0	4,0	4,0
KM fixing clip for CD60 profile	pcs.	5,0	5,0	5,0	5,0	5,0	5,0	-	-	-	-	-	-
CB fixing clip for MFCE26 profile	pcs.	-	-	-	-	-	-	7,0	7,0	7,0	7,0	7,0	7,0
Nida 3.5x25 mm sheet metal screws	pcs.	12,0	-	12,0	12,0	12,0	12,0	12,0	-	12,0	12,0	12,0	12,0
Nida 3.5x35 mm sheet metal screws	pcs.	48,0	12,0	-	12,0	12,0	-	48,0	12,0	-	12,0	12,0	-
Nida 3.5x45 mm sheet metal screws	pcs.	-	48,0	48,0	-	-	12,0	-	48,0	48,0	-	-	12,0
Nida 3.5x55 mm sheet metal screws	pcs.	-	-	-	48,0	48,0	48,0	-	-	-	48,0	48,0	48,0
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [3]	kg	1,1 [4]	1,1 [4]	1,1 [4]	1,3 [4]	1,3 [4]	1,3 [4]	1,1 [4]	1,1 [4]	1,1 [4]	1,3 [4]	1,3 [4]	1,3 [4]
Nida perforated aluminium corner profile	lm	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R60–R180**

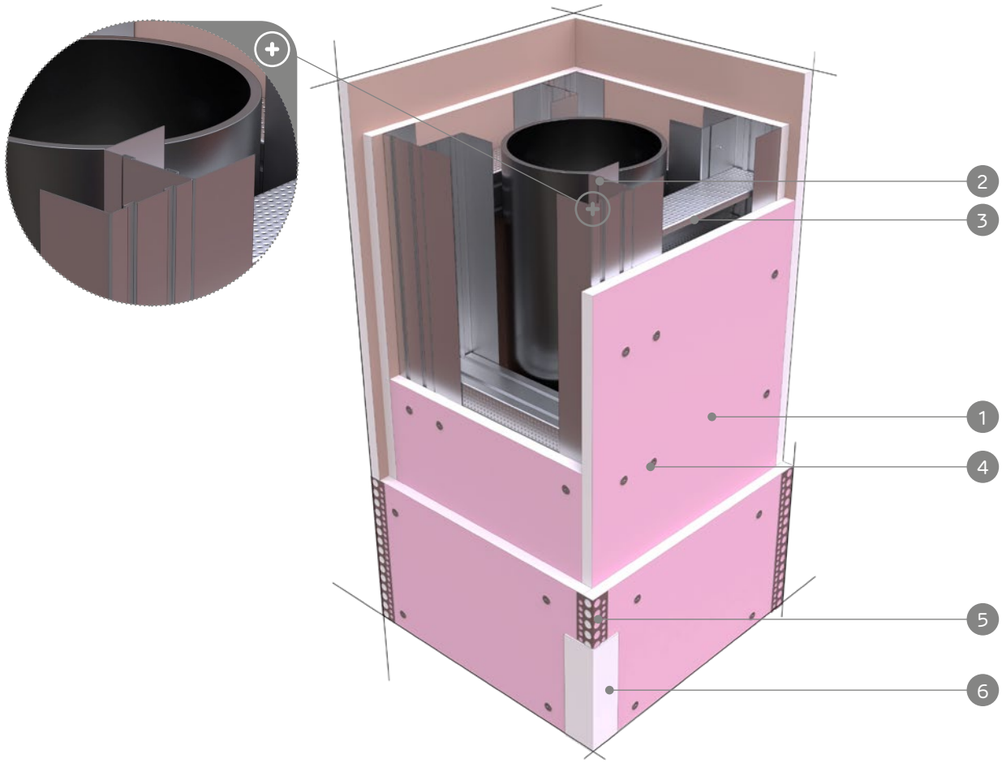
Weight of 1 linear metre of encasement: **35,0–55,0 kg**

Number of related document: **ITB fire classification**

ITB fire classification: **ITB 1060/18/R125NZP**

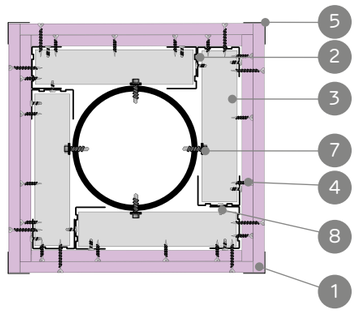
SYSTEMS:

4/C50-U50/25; 4/C50-U50/27,5; 4/C50-U50/30; 4/C50-U50/37,5; 4/C50-U50/40; 4/C50-U50/42,5



MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida C50 profile
3. Nida U50 profile
4. Nida sheet metal screws
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. Self-drilling screw with hexagonal head
8. FLAT HEAD 4.2x13 mm self-drilling screws for 1 mm sheet metal



THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH ROUND HOLLOW CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/C50-U50/60/25/Flam+	-	-	●	●	-	2x12,5	35	500	R60
4/C50-U50/90/25/Flam+	-	-	●	●	-	2x12,5	35	500	R90
4/C50-U50/120/25/Flam+	-	-	●	●	-	2x12,5	35	450	R120
4/C50-U50/90/27,5/Flam+	-	-	●	●	●	12,5 +15	38	500	R90
4/C50-U50/90/30/Flam+	-	-	●	-	●	2x15	41	500	R90
4/C50-U50/120/30/Flam+	-	-	●	-	●	2x15	41	450	R120
4/C50-U50/90/37,5/Flam+	-	-	●	●	-	3x12,5	49	500	R90
4/C50-U50/120/37,5/Flam+	-	-	●	●	-	3x12,5	49	450	R120
4/C50-U50/120/40/Flam+	-	-	●	●	●	2x12,5 + 15	52	450	R120
4/C50-U50/120/42,5/Flam+	-	-	●	●	●	2x15 + 12,5	55	450	R120
4/C50-U50/180/42,5/Flam+	-	-	●	●	●	2x15 + 12,5	55	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal					
		4/C50-U50/25	4/C50-U50/27,5	4/C50-U50/30	4/C50-U50/37,5	4/C50-U50/40	4/C50-U50/42,5
		Consumption of material per 1 linear metre					
Nida Flam Plus 12.5 mm plasterboard	m^2	2x+0,6	x+0,3	-	3x+0,9	2x+0,6	x+0,3
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3	2x+0,6	-	x+0,3	2x+0,6
Profil Nida C50	lm	1,1x	1,1x	1,1x	1,1x	1,1x	1,1x
Profil Nida U50	lm	8,0	8,0	8,0	8,0	8,0	8,0
FLAT HEAD 4.2x13 mm self-drilling screws for 1 mm sheet metal	pcs.	16,0	16,0	16,0	16,0	16,0	16,0
Nida 3,5x25 mm sheet metal screws	pcs.	12,0	-	12,0	12,0	12,0	12,0
Nida 3,5x35 mm sheet metal screws	pcs.	48,0	12,0	-	12,0	12,0	-
Nida 3,5x45 mm sheet metal screws	pcs.	-	48,0	48,0	-	-	12,0
Nida 3,5x55 mm sheet metal screws	pcs.	-	-	-	48,0	48,0	48,0
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [3]	kg	1,1 [4]	1,1 [4]	1,1 [4]	1,3 [4]	1,3 [4]	1,3 [4]
Nida perforated aluminium corner profile	lm	4,0	4,0	4,0	4,0	4,0	4,0

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
[5] Anchoring of the Nida sub-structure to the encased steel structure takes place with utilisation of self-drilling screws for sheet metal selected appropriately for the profile thickness. IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R60–R180**

Weight of 1 linear metre of encasement: **26,0–50,0 kg**

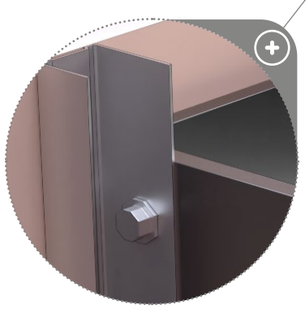
Number of related document: **ITB fire classification**

ITB fire classification: **ITB 1060/18/R125NZP**

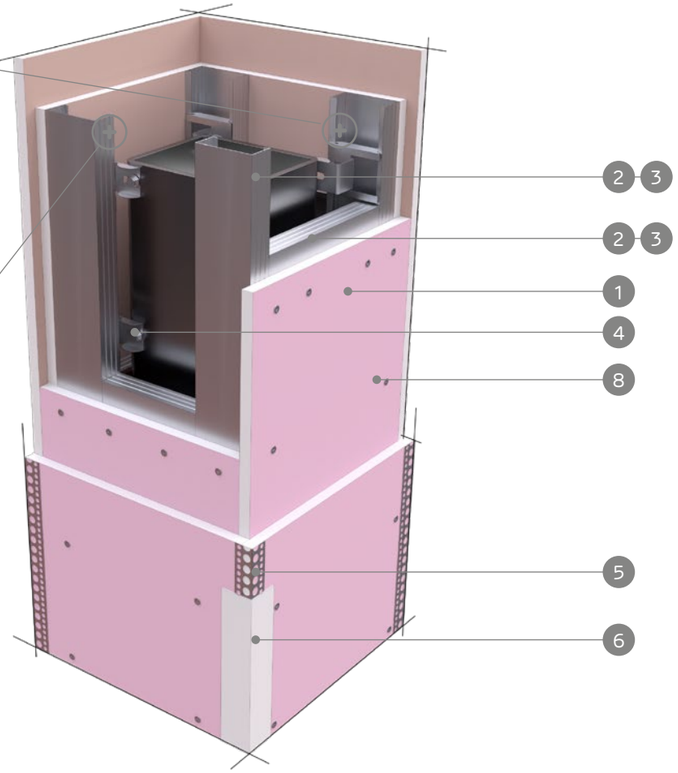
SYSTEMS:

4/KM-CD60/25; 4/KM-CD60/27,5; 4/KM-CD60/30; 4/KM-CD60/37,5; 4/KM-CD60/40; 4/KM-CD60/42,5; 4/CB-MF/25; 4/CB-MF/27,5; 4/CB-MF/30; 4/CB-MF/37,5; 4/CB-MF/40; 4/CB-MF/42,5

KM fixing clip for Nida CD60 profiles

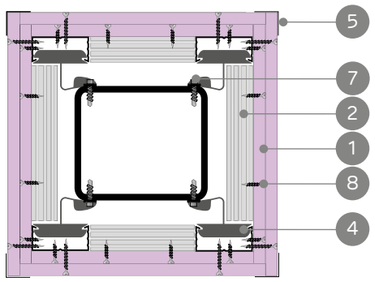


Fixing of MFCE26 profiles

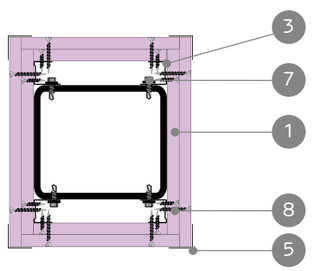


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida MFCE26 profile
4. KM fixing clip for Nida CD60 profiles
5. Perforated aluminium corner profile
6. Nida gypsum putty
7. Self-drilling screw with hexagonal head
8. Nida sheet metal screws



KM fixing clip for Nida CD60 profiles



Fixing of MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (COLUMNS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
4/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	31	500	R60
4/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	31	500	R90
4/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	31	450	R120
4/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	34	500	R90
4/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	37	500	R90
4/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	37	450	R120
4/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	45	500	R90
4/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	45	450	R120
4/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	47	450	R120
4/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R120
4/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	50	450	R180
4/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	26	500	R60
4/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	26	500	R90
4/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	26	450	R120
4/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	29	500	R90
4/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	31	500	R90
4/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	31	450	R120
4/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	38	500	R90
4/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	38	450	R120
4/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	41	450	R120
4/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R120
4/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	43	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal											
		4/KM--CD60/25	4/KM--CD60/27,5	4/KM--CD60/30	4/KM--CD60/37,5	4/KM--CD60/40	4/KM--CD60/42,5	4/CB--MF/25	4/CB--MF/27,5	4/CB--MF/30	4/CB--MF/37,5	4/CB--MF/40	4/CB--MF/42,5
		Consumption of material per 1 linear metre											
Nida Flam Plus 12.5 mm plasterboard	m^2	2x+0,6	x+0,3	-	3x+0,9	2x+0,6	x+0,3	2x+0,3	x+0,15	-	3x+0,45	2x+0,3	x+0,15
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,3	2x+0,6	-	x+0,3	2x+0,6	-	x+0,15	2x+0,3	-	x+0,15	2x+0,3
Nida CD60 profile	lm	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	(0,9x+4,0)	-	-	-	-	-	-
Nida MFCE26 profile	lm	-	-	-	-	-	-	4,0	4,0	4,0	4,0	4,0	4,0
KM fixing clip for CD60 profile	pcs.	5,0	5,0	5,0	5,0	5,0	5,0	-	-	-	-	-	-
Nida 3,5x25 mm sheet metal screws	pcs.	12,0	-	12,0	12,0	12,0	12,0	12,0	-	12,0	12,0	12,0	12,0
Nida 3,5x35 mm sheet metal screws	pcs.	48,0	12,0	-	12,0	12,0	-	48,0	12,0	-	12,0	12,0	-
Nida 3,5x45 mm sheet metal screws	pcs.	-	48,0	48,0	-	-	12,0	-	48,0	48,0	-	-	12,0
Nida 3,5x55 mm sheet metal screws	pcs.	-	-	-	48,0	48,0	48,0	-	-	-	48,0	48,0	48,0
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [3]	kg	1,1 [4]	1,1 [4]	1,1 [4]	1,3 [4]	1,3 [4]	1,3 [4]	1,1 [4]	1,1 [4]	1,1 [4]	1,3 [4]	1,3 [4]	1,3 [4]
Nida perforated aluminium corner profile	lm	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0

[3] Alternatively, apply the Nida Fire A1 gypsum putty.
[4] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+2b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R15–R120**

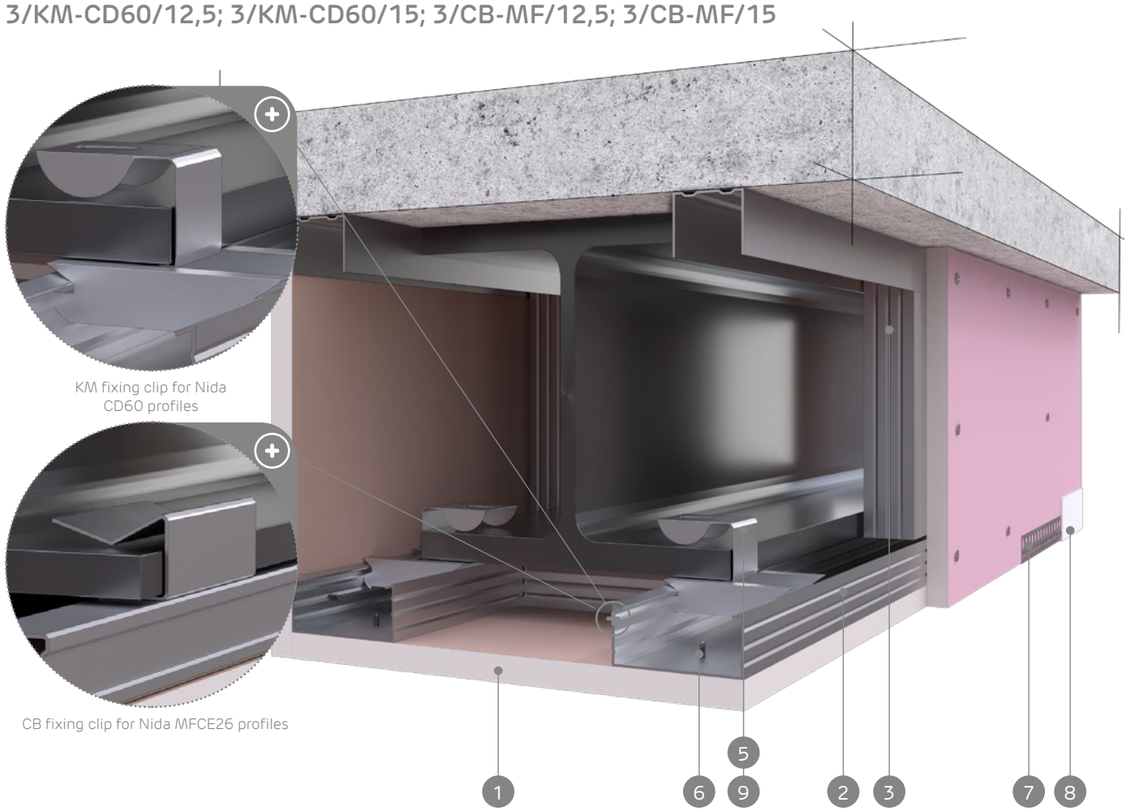
Weight of 1 linear metre of encasement: **10,0–14,0 kg**

Number of related document: **ITB fire classification**

ITB fire classification: **ITB 1060/18/R125NZP**

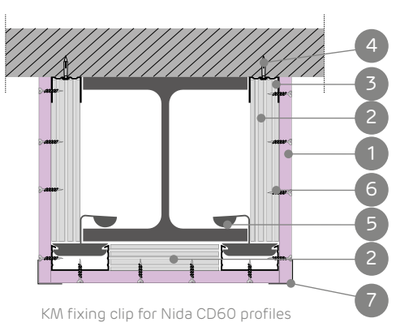
SYSTEMS:

3/KM-CD60/12,5; 3/KM-CD60/15; 3/CB-MF/12,5; 3/CB-MF/15

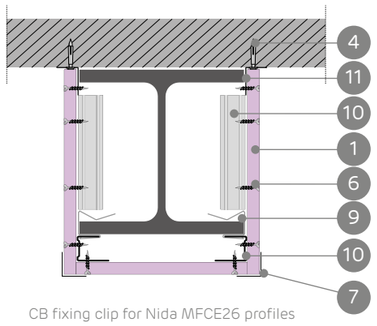


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida UD27 profile
4. Steel anchoring element
5. KM fixing clip for Nida CD60 profiles
6. Nida sheet metal screws
7. Perforated aluminium corner profile
8. Nida gypsum putty
9. CB fixing clip for Nida MFCE26 profiles
10. Nida MFCE26 profile
11. Nida MFC2330 steel angle profile



KM fixing clip for Nida CD60 profiles



CB fixing clip for Nida MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (BEAMS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
3/KM-CD60/15/12,5/Flam+	●	-	-	●	-	12,5	12	550	R15
3/KM-CD60/30/12,5/Flam+	●	-	-	●	-	12,5	12	550	R30
3/KM-CD60/60/12,5/Flam+	●	-	-	●	-	12,5	12	500	R60
3/KM-CD60/30/15/Flam+	●	-	-	-	●	15	14	550	R30
3/KM-CD60/60/15/Flam+	●	-	-	-	●	15	14	500	R60
3/KM-CD60/90/15/Flam+	●	-	-	-	●	15	14	500	R90
3/KM-CD60/120/15/Flam+	●	-	-	-	●	15	14	450	R120
3/CB-MF/15/12,5/Flam+	-	●	-	●	-	12,5	10	550	R15
3/CB-MF/30/12,5/Flam+	-	●	-	●	-	12,5	10	550	R30
3/CB-MF/60/12,5/Flam+	-	●	-	●	-	12,5	10	500	R60
3/CB-MF/30/15/Flam+	-	●	-	-	●	15	12	550	R30
3/CB-MF/60/15/Flam+	-	●	-	-	●	15	12	500	R60
3/CB-MF/90/15/Flam+	-	●	-	-	●	15	12	500	R90
3/CB-MF/120/15/Flam+	-	●	-	-	●	15	12	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal			
		3/KM-CD60/12,5	3/KM-CD60/15	3/CB-MF/12,5	3/CB-MF/15
		Consumption of material per 1 linear metre			
Nida Flam Plus 12.5 mm plasterboard	m^2	x+0,2	-	x+0,1	-
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,2	-	x+0,1
Nida CD60 profile	lm	(0,9x+2,0)	(0,9x+2,0)	-	-
Nida MFCE26 profile	lm	-	-	(0,9x+2,0)	(0,9x+2,0)
Nida UD27 profile	lm	2	2	-	-
Nida MFC2330 profile	lm	-	-	2	2
KM fixing clip for CD60 profile	pcs.	2,5	2,5	-	-
CB fixing clip for MFCE26 profile	pcs.	-	-	3,5	3,5
Steel anchoring element [3]	pcs.	3,4	3,4	3,4	3,4
Nida 3,5x25 mm sheet metal screws	pcs.	36	36	36	36
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [4]	kg	0,7 [5]	0,7 [5]	0,7 [5]	0,7 [5]
Nida perforated aluminium corner profile	lm	2	2	2	2

[3] The type of the anchoring element should be selected individually adequately for the substrate type and the total mass of the encasement.
[4] Alternatively, apply the Nida Fire A1 gypsum putty.
[5] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: R15–R120

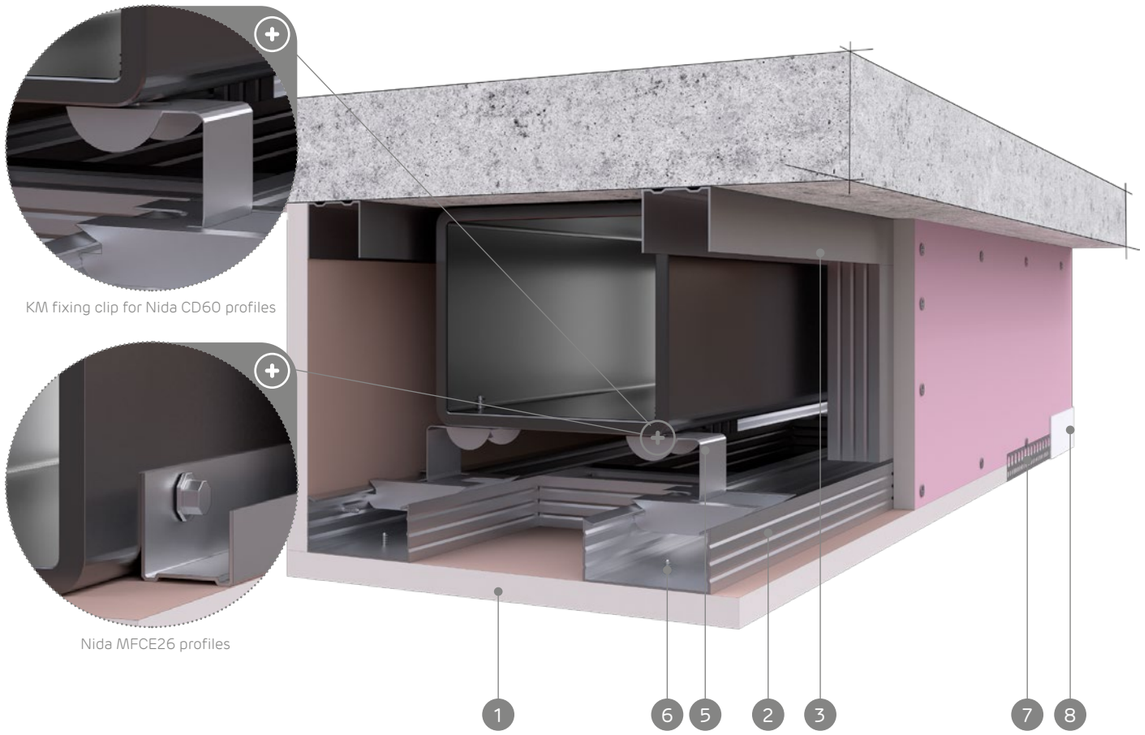
Weight of 1 linear metre of encasement: 10,0–14,0 kg

Number of related document: ITB fire classification

ITB fire classification: ITB 1060/18/R125NZP

SYSTEMS:

3/KM-CD60/12,5; 3/KM-CD60/15; 3/CB-MF/12,5; 3/CB-MF/15

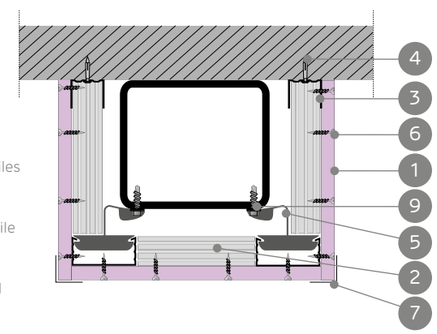


KM fixing clip for Nida CD60 profiles

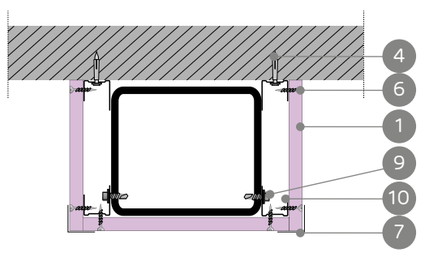
Nida MFCE26 profiles

MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida UD27 profile
4. Steel anchoring element
5. KM fixing clip for Nida CD60 profiles
6. Nida sheet metal screws
7. Perforated aluminium corner profile
8. Nida gypsum putty
9. Self-drilling screw with hexagonal head
10. Nida MFCE26 profile



KM fixing clip for Nida CD60 profiles



Nida MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (BEAMS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
3/KM-CD60/15/12,5/Flam+	●	-	-	●	-	12,5	12	550	R15
3/KM-CD60/30/12,5/Flam+	●	-	-	●	-	12,5	12	550	R30
3/KM-CD60/60/12,5/Flam+	●	-	-	●	-	12,5	12	500	R60
3/KM-CD60/30/15/Flam+	●	-	-	-	●	15	14	550	R30
3/KM-CD60/60/15/Flam+	●	-	-	-	●	15	14	500	R60
3/KM-CD60/90/15/Flam+	●	-	-	-	●	15	14	500	R90
3/KM-CD60/120/15/Flam+	●	-	-	-	●	15	14	450	R120
3/CB-MF/15/12,5/Flam+	-	●	-	●	-	12,5	10	550	R15
3/CB-MF/30/12,5/Flam+	-	●	-	●	-	12,5	10	550	R30
3/CB-MF/60/12,5/Flam+	-	●	-	●	-	12,5	10	500	R60
3/CB-MF/30/15/Flam+	-	●	-	-	●	15	12	550	R30
3/CB-MF/60/15/Flam+	-	●	-	-	●	15	12	500	R60
3/CB-MF/90/15/Flam+	-	●	-	-	●	15	12	500	R90
3/CB-MF/120/15/Flam+	-	●	-	-	●	15	12	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal			
		3/KM-CD60/12,5	3/KM-CD60/15	3/CB-MF/12,5	3/CB-MF/15
		Consumption of material per 1 linear metre			
Nida Flam Plus 12.5 mm plasterboard	m^2	x+0,2	-	x+0,1	-
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,2	-	x+0,1
Nida CD60 profile	lm	(0,9x+2,0)	(0,9x+2,0)	-	-
Nida MFCE26 profile	lm	-	-	4,0	4,0
Nida UD27 profile	lm	2	2	-	-
KM fixing clip for CD60 profile	pcs.	2,5	2,5	-	-
Steel anchoring element [3]	pcs.	3,4	3,4	3,4	3,4
Nida 3,5x25 mm sheet metal screws	pcs.	36	36	36	36
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [4]	kg	0,7 [5]	0,7 [5]	0,7 [5]	0,7 [5]
Nida perforated aluminium corner profile	lm	2	2	2	2

[3] The type of the anchoring element should be selected individually adequately for the substrate type and the total mass of the encasement.
[4] Alternatively, apply the Nida Fire A1 gypsum putty.
[5] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

ENCASEMENTS FOR STEEL LOAD-BEARING STRUCTURES

nida Stal

Fire resistance class: **R60–R180**

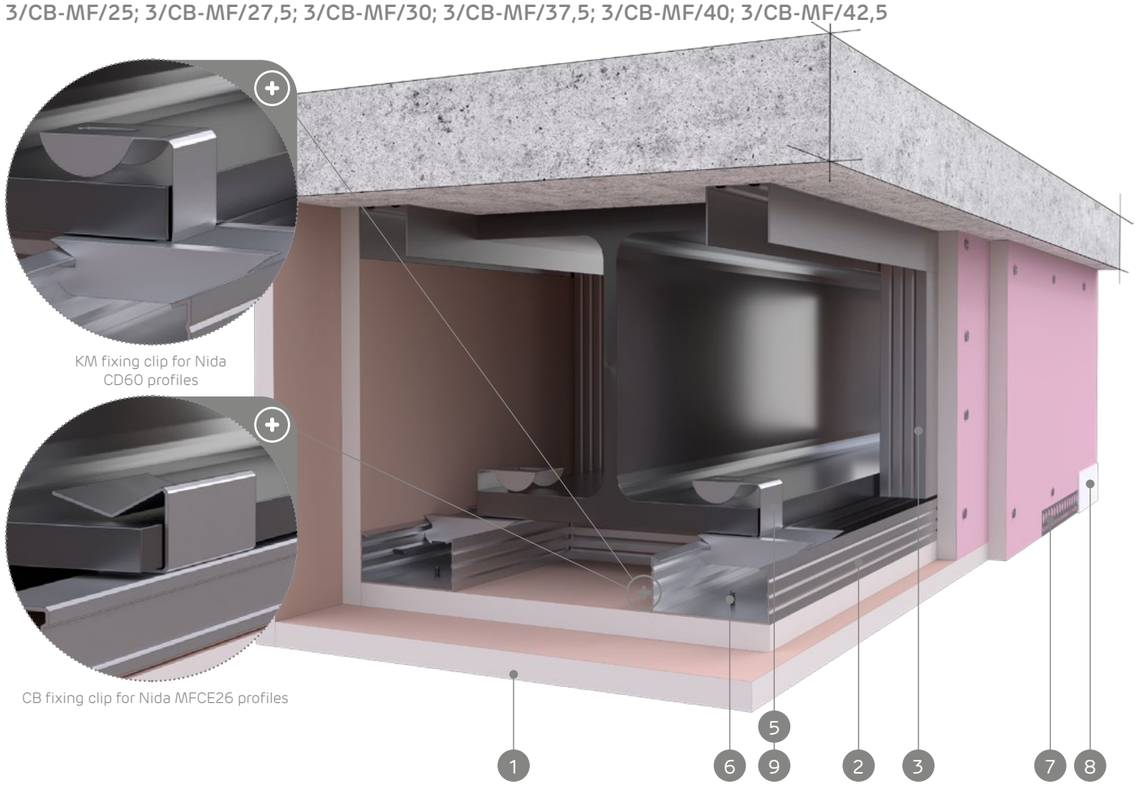
Weight of 1 linear metre of encasement: **19,0–37,0 kg**

Number of related document: **ITB fire classification**

ITB fire classification: **ITB 1060/18/R125NZP**

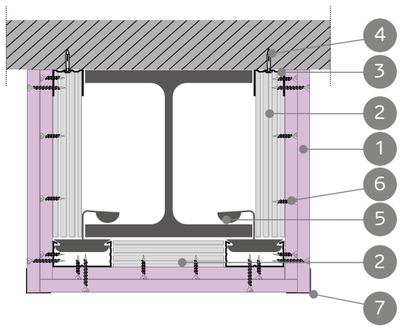
SYSTEMS:

3/KM-CD60/25; 3/KM-CD60/27,5; 3/KM-CD60/30; 3/KM-CD60/37,5; 3/KM-CD60/40; 3/KM-CD60/42,5; 3/CB-MF/25; 3/CB-MF/27,5; 3/CB-MF/30; 3/CB-MF/37,5; 3/CB-MF/40; 3/CB-MF/42,5

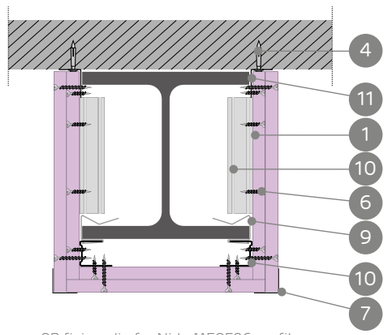


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida UD27 profile
4. Steel anchoring element
5. KM fixing clip for Nida CD60 profiles
6. Nida sheet metal screws
7. Perforated aluminium corner profile
8. Nida gypsum putty
9. CB fixing clip for Nida MFCE26 profiles
10. Nida MFCE26 profile
11. Nida MFC2330 steel angle profile



KM fixing clip for Nida CD60 profiles



CB fixing clip for Nida MFCE26 profiles

THE FIRST DRYWALL ENCASEMENT SYSTEM WITH THE CE MARKING AVAILABLE ON THE MARKET

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THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH OPEN CROSS-SECTIONS (BEAMS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
3/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	22	500	R60
3/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	22	500	R90
3/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	22	450	R120
3/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	24	500	R90
3/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	26	500	R90
3/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	26	450	R120
3/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	32	500	R90
3/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	32	450	R120
3/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	34	450	R120
3/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	37	450	R120
3/KM-CD60/180/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	37	450	R180
3/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	19	500	R60
3/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	19	500	R90
3/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	19	450	R120
3/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	21	500	R90
3/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	23	500	R90
3/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	23	450	R120
3/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	28	500	R90
3/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	28	450	R120
3/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	30	450	R120
3/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	32	450	R120
3/CB-MF/180/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	32	450	R180

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal											
		3/KM-CD60/25	3/KM-CD60/27,5	3/KM-CD60/30	3/KM-CD60/37,5	3/KM-CD60/40	3/KM-CD60/42,5	3/CB-MF/25	3/CB-MF/27,5	3/CB-MF/30	3/CB-MF/37,5	3/CB-MF/40	3/CB-MF/42,5
		Consumption of material per 1 linear metre											
Nida Flam Plus 12.5 mm plasterboard	m^2	2x+0,4	x+0,2	-	3x+0,6	2x+0,4	x+0,2	2x+0,2	x+0,1	-	3x+0,3	2x+0,2	x+0,1
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,2	2x+0,4	-	x+0,2	2x+0,4	-	x+0,1	2x+0,2	-	x+0,1	2x+0,2
Nida CD60 profile	lm	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	-	-	-	-	-	-
Nida MFCE26 profile	lm	-	-	-	-	-	-	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)
Nida UD27 profile	lm	2,0	2,0	2,0	2,0	2,0	2,0	-	-	-	-	-	-
Nida MFC2330 profile	lm	-	-	-	-	-	-	2,0	2,0	2,0	2,0	2,0	2,0
KM fixing clip for CD60 profile	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	-	-	-	-	-	-
CB fixing clip for MFCE26 profile	pcs.	-	-	-	-	-	-	3,5	3,5	3,5	3,5	3,5	3,5
Steel anchoring element [3]	pcs.	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4
Nida 3,5x25 mm sheet metal screws	pcs.	12,0	-	12,0	12,0	12,0	12,0	12,0	-	12,0	12,0	12,0	12,0
Nida 3,5x35 mm sheet metal screws	pcs.	36,0	12,0	-	12,0	12,0	-	36,0	12,0	-	12,0	12,0	-
Nida 3,5x45 mm sheet metal screws	pcs.	-	36,0	36,0	-	-	12,0	-	36,0	36,0	-	-	12,0
Nida 3,5x55 mm sheet metal screws	pcs.	-	-	-	36,0	36,0	36,0	-	-	-	36,0	36,0	36,0
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [4]	kg	0,9 [5]	0,9 [5]	0,9 [5]	1,1 [5]	1,1 [5]	1,1 [5]	0,9 [5]	0,9 [5]	0,9 [5]	1,1 [5]	1,1 [5]	1,1 [5]
Nida perforated aluminium corner profile	lm	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0

[3] The type of the anchoring element should be selected individually adequately for the substrate type and the total mass of the encasement.
[4] Alternatively, apply the Nida Fire A1 gypsum putty.
[5] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

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nida Stal

Fire resistance class: R60–R120

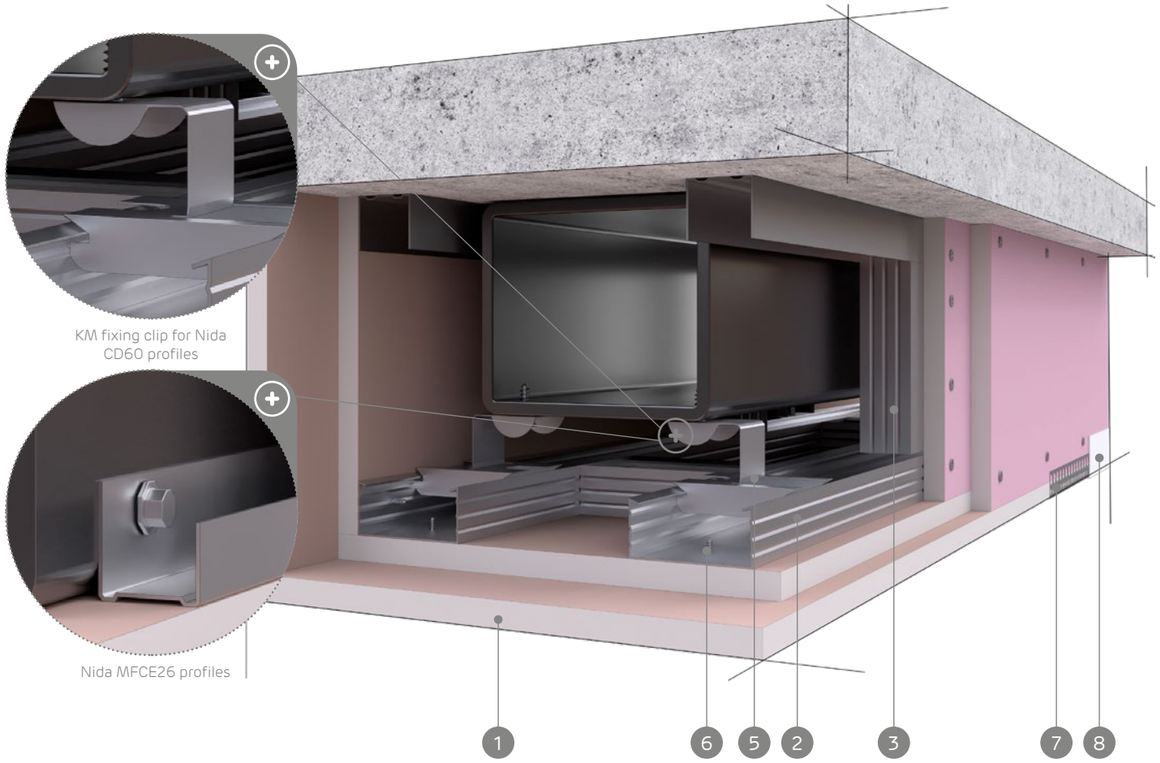
Weight of 1 linear metre of encasement: 19,0–37,0 kg

Number of related document: ITB fire classification

ITB fire classification: ITB 1060/18/R125NZP

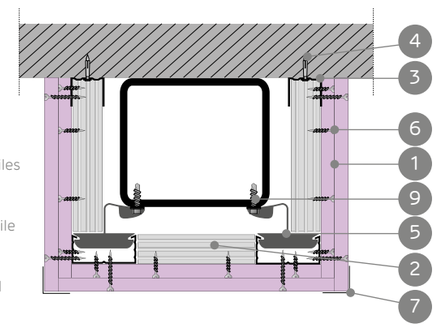
SYSTEMS:

3/KM-CD60/25; 3/KM-CD60/27,5; 3/KM-CD60/30; 3/KM-CD60/37,5; 3/KM-CD60/40; 3/KM-CD60/42,5; 3/CB-MF/25; 3/CB-MF/27,5; 3/CB-MF/30; 3/CB-MF/37,5; 3/CB-MF/40; 3/CB-MF/42,5

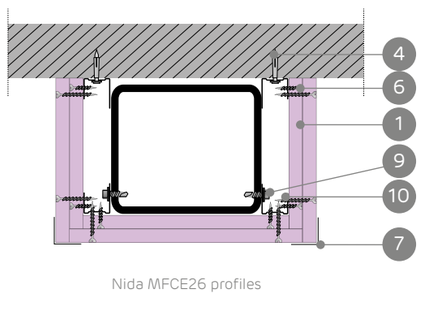


MATERIALS:

1. Nida Flam Plus plasterboard
2. Nida CD60 profile
3. Nida UD27 profile
4. Steel anchoring element
5. KM fixing clip for Nida CD60 profiles
6. Nida sheet metal screws
7. Perforated aluminium corner profile
8. Nida gypsum putty
9. Self-drilling screw with hexagonal head
10. Nida MFCE26 profile



KM fixing clip for Nida CD60 profiles



Nida MFCE26 profiles

THE ENCASEMENT SYSTEM FOR STEEL LOAD-BEARING STRUCTURES WITH RECTANGULAR HOLLOW CROSS-SECTIONS (BEAMS)

TECHNICAL PARAMETERS

Type of Nida Stal fire protective encasement	Frame structure			Nida Flam Plus (DFR) plasterboard		Sheathing arrangement	Weight of 1 linear metre of encasement [1]	Critical temperature	Fire resistance class [2]
	KM-CD60	CB-MF	C50-U50	12,5 [mm]	15 [mm]	[mm]	kg	°C	[min]
3/KM-CD60/60/25/Flam+	●	-	-	●	-	2x12,5	22	500	R60
3/KM-CD60/90/25/Flam+	●	-	-	●	-	2x12,5	22	500	R90
3/KM-CD60/120/25/Flam+	●	-	-	●	-	2x12,5	22	450	R120
3/KM-CD60/90/27,5/Flam+	●	-	-	●	●	12,5 +15	24	500	R90
3/KM-CD60/90/30/Flam+	●	-	-	-	●	2x15	26	500	R90
3/KM-CD60/120/30/Flam+	●	-	-	-	●	2x15	26	450	R120
3/KM-CD60/90/37,5/Flam+	●	-	-	●	-	3x12,5	32	500	R90
3/KM-CD60/120/37,5/Flam+	●	-	-	●	-	3x12,5	32	450	R120
3/KM-CD60/120/40/Flam+	●	-	-	●	●	2x12,5 + 15	34	450	R120
3/KM-CD60/120/42,5/Flam+	●	-	-	●	●	2x15 + 12,5	37	450	R120
3/CB-MF/60/25/Flam+	-	●	-	●	-	2x12,5	19	500	R60
3/CB-MF/90/25/Flam+	-	●	-	●	-	2x12,5	19	500	R90
3/CB-MF/120/25/Flam+	-	●	-	●	-	2x12,5	19	450	R120
3/CB-MF/90/27,5/Flam+	-	●	-	●	●	12,5 +15	22	500	R90
3/CB-MF/90/30/Flam+	-	●	-	-	●	2x15	23	500	R90
3/CB-MF/120/30/Flam+	-	●	-	-	●	2x15	23	450	R120
3/CB-MF/90/37,5/Flam+	-	●	-	●	-	3x12,5	28	500	R90
3/CB-MF/120/37,5/Flam+	-	●	-	●	-	3x12,5	28	450	R120
3/CB-MF/120/40/Flam+	-	●	-	●	●	2x12,5 + 15	30	450	R120
3/CB-MF/120/42,5/Flam+	-	●	-	●	●	2x15 + 12,5	32	450	R120

[1] The encasement weight was calculated for a steel element with the cross-section dimensions a=240 mm, b=240 mm.
[2] Fire classification ITB 1060/18/R125NZP.

CONSUMPTION OF MATERIAL PER 1 LINEAR METRE OF THE NIDA STAL ENCASEMENT FOR STEEL LOAD-BEARING STRUCTURES

Material name	UM	System type Nida Stal											
		3/KM-CD60/25	3/KM-CD60/27,5	3/KM-CD60/30	3/KM-CD60/37,5	3/KM-CD60/40	3/KM-CD60/42,5	3/CB-MF/25	3/CB-MF/27,5	3/CB-MF/30	3/CB-MF/37,5	3/CB-MF/40	3/CB-MF/42,5
		Consumption of material per 1 linear metre											
Nida Flam Plus 12.5 mm plasterboard	m^2	2x+0,4	x+0,2	-	3x+0,6	2x+0,4	x+0,2	2x+0,2	x+0,1	-	3x+0,3	2x+0,2	x+0,1
Nida Flam Plus 15.0 mm plasterboard	m^2	-	x+0,2	2x+0,4	-	x+0,2	2x+0,4	-	x+0,1	2x+0,2	-	x+0,1	2x+0,2
Nida CD60 profile	lm	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	(0,9x+2,0)	-	-	-	-	-	-
Nida MFCE26 profile	lm	-	-	-	-	-	-	4,0	4,0	4,0	4,0	4,0	4,0
Nida UD27 profile	lm	2,0	2,0	2,0	2,0	2,0	2,0	-	-	-	-	-	-
KM fixing clip for CD60 profile	pcs.	2,5	2,5	2,5	2,5	2,5	2,5	-	-	-	-	-	-
Steel anchoring element [3]	pcs.	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4
Nida 3,5x25 mm sheet metal screws	pcs.	12,0	-	12,0	12,0	12,0	12,0	12,0	-	12,0	12,0	12,0	12,0
Nida 3,5x35 mm sheet metal screws	pcs.	36,0	12,0	-	12,0	12,0	-	36,0	12,0	-	12,0	12,0	-
Nida 3,5x45 mm sheet metal screws	pcs.	-	36,0	36,0	-	-	12,0	-	36,0	36,0	-	-	12,0
Nida 3,5x55 mm sheet metal screws	pcs.	-	-	-	36,0	36,0	36,0	-	-	-	36,0	36,0	36,0
Nida reinforcement tape	lm	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x	0,9x
Nida Max gypsum putty [4]	kg	0,9 [5]	0,9 [5]	0,9 [5]	1,1 [5]	1,1 [5]	1,1 [5]	0,9 [5]	0,9 [5]	0,9 [5]	1,1 [5]	1,1 [5]	1,1 [5]
Nida perforated aluminium corner profile	lm	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0

[3] The type of the anchoring element should be selected individually adequately for the substrate type and the total mass of the encasement.
[4] Alternatively, apply the Nida Fire A1 gypsum putty.
[5] Approximate consumption standard.
IMPORTANT: How the "X" value is calculated. X=2h+b (where: h - height of the element of the steel structure, b - width of the element of the steel structure).
The standards concerning the amount of utilised material do not cover the loss of the material.

fire protection for steel **elements of load-bearing structures**

Siniat offers a number of systems aimed at providing fire protection to steel load-bearing structures of buildings constructed of open and closed profiles. All the systems have been tested and received a positive assessment issued by the Institute of Building Technology in Warsaw.

All the described systems feature the Nida Flam Plus fire protection boards, thickness 12.5 and 15 mm, which are fixed to steel structures. The provided passive fire protection systems in a unique way join the visually pleasing aesthetic qualities with the fire protection requirements. The Nida Stal systems enable protection of steel structural elements meeting the requirements of the following classes: R15, R30, R60, R90, R120, R180.

Designations of the fire protection system for the Nida Stal steel structures

In order to facilitate the process of selecting the system appropriate for individual customers within the range of the fire resistance, the structural element type, and the configuration of sheathing, we are presenting examples of markings with a detailed description of its individual elements.

Nida Stal 3 / KM-CD60 / 60 / 15 /FLAM+

Name of Nida system

Type of protection:
- 3 – three-sided protection
- 4 – four-sided protection

Type of structure:
- KM-CD60
- CB-MF
- C50-U50

Fire resistance class:
- 15 - R15
- 30 - R30
- 60 - R60
- 90 - R90
- 120 - R120
- 180 - R180

Overall thickness of sheathing:
- 12,5 = 1x12,5
- 15,0 = 1x15,0
- 25,0 = 2x12,5
- 27,5 = 1x12,5+1x15,0
- 30,0 = 2x15,0
- 37,5 = 3x12,5
- 40,0 = 2x12,5+1x15,0
- 42,5 = 2x15,0+1x12,5

Type of sheathing: Nida

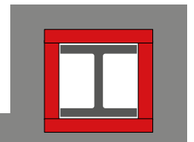
calculation tables for typical **load-bearing steel structures**

The following tables enable selecting the thinnest possible sheathing layer for a specific typical steel section required in order to achieve a definite fire resistance class. For each thickness of sheathing one Nida Stal fire protection system offered by Siniat is assigned. Utilisation of this particular system is the most economical solution solving the problem of providing fire protection to a given structure. The solutions presented below consider the open steel sections : IPN, IPE, HE-A, HE-B, HE-M (PN-91/H-93407, PN-EN 10024:98, EN 10024:95) and hollow sections with rectangular and round cross-sections available on the market (PN-EN 10210-2:2000, PN-EN 10219-2:2000), with fire exposition from four sides for columns, or from three sides for steel beams. In the case of protection of steel structures of round and rectangular cross-section profiles, we recommend contact with our Technical Advisors. The following tables can be utilised when the critical temperature for steel was not determined in the design, or when it is identical to the assumed below.

The data compiled in the tables was accepted according to the ITB 1060/18/ R125NZP fire classification, and the critical temperatures for steel are as follows:

- for the fire resistance R15 and R30 – the critical temperature for steel Tkr=550°C,
- for the fire resistance R60 and R90 – the critical temperature for steel is Tkr=500°C,
- for the fire resistance R120 and R180 – the critical temperature for steel is Tkr=450°C

steel **columns**



NORMAL DOUBLE-T SECTION TYPE I

Fire resistance class	Double-T section dimensions - IPN																Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	120	140	160	180	200	220	240	260	300	340	360	400	450	500	550	600		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60																●	12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60								●	●	●	●	●	●	●	●		15,0	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25,0	Nida Stal 4/KM-CD60/60/25/Flam+*
R90										●	●	●	●	●	●	●	25,0	Nida Stal 4/KM-CD60/90/25/Flam+*
R90								●	●								27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90				●	●	●	●										30,0	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●	●														37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120																●	30,0	Nida Stal 4/KM-CD60/120/30/Flam+*
R120									●	●	●	●	●	●	●		37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120			●	●	●	●	●	●									40,0	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●															42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	251	227	206	188	174	162	151	140	124	111	104	95	85	77	71	65	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

www.siniat.pl

Nida systems search engine
www.systemynida.pl

Calculator of the Nida systems
www.siniat.pl/kalkulatory

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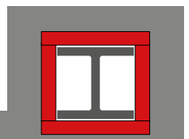
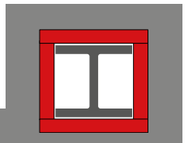


DOUBLE-T SECTION TYPE IPE – 4-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions – IPE															Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	140	160	180	200	220	240	270	300	330	360	400	450	500	550	600		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60											●	●	●	●	●	15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90														●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90											●	●	●			27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90					●	●	●	●	●	●						30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●	●	●												37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120												●	●	●	●	37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120					●	●	●	●	●	●	●					40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●	●	●												42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	260	241	227	211	198	185	177	168	157	146	138	130	121	114	106	Massiveness factor U/A	

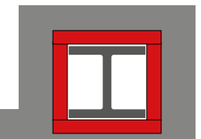
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



DOUBLE-T SECTION TYPE HEA – 4-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions – HEA																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90							●	●																	27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90	●	●	●	●	●	●																			30	Nida Stal 4/KM-CD60/90/30/Flam+*
R120								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●	●	●	●	●	●																		40	Nida Stal 4/KM-CD60/120/40/Flam+*
	185	185	174	161	155	145	134	123	118	114	105	99	95	91	87	84	80	80	79	78	77	77	75	75	Massiveness factor U/A	

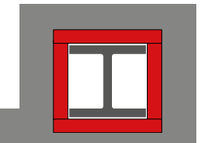
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



DOUBLE-T SECTION TYPE HEB – 4-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions – HEB																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60																●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60			●	●	●	●	●	●	●	●	●	●	●	●	●										15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90			●																						27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90	●	●																							30	Nida Stal 4/KM-CD60/90/30/Flam+*
R120																●	●	●	●	●	●	●	●	●	30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120				●	●	●	●	●	●	●	●	●	●	●	●										37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●	●																						40	Nida Stal 4/KM-CD60/120/40/Flam+*
	154	142	131	118	111	103	97	91	89	86	81	78	75	73	71	69	67	67	67	67	66	66	65	65	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



DOUBLE-T SECTION TYPE HE-M – 4-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions – HE-M																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60	●	●	●	●																					15	Nida Stal 4/KM-CD60/60/15/Flam+*
R90					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	Nida Stal 4/KM-CD60/90/15/Flam+*
R90	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R120								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/120/25/Flam+*
R120					●	●	●																		30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120	●	●	●	●																					37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
	85	81	76	72	69	66	63	52	51	50	43	43	44	45	46	47	49	50	51	53	54	56	58	60	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

HOLLOW PROFILE ROUND CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	External diameter 76,1	88,9	101,6	114,3	139,7	168,3	Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	Wall thickness							
	6,0	6,0 6,3	6,0 6,3 8,0 10,0	6,0 6,3 8,0 10,0	5,0 6,0 6,3 8,0 10,0 12,0 12,5	5,0 6,0 6,3 8,0 10,0 12,0 12,5		
R15	●	● ●	● ● ● ●	● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/15/12,5/Flam+
R30	●	● ●	● ● ● ●	● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/30/12,5/Flam+
R60				●	● ● ●	● ● ●	15	Nida Stal 4/C50-U50/60/15/Flam+
R60	●	● ●	● ● ● ●	● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●	25	Nida Stal 4/C50-U50/60/25/Flam+
R90					● ●	● ●	25	Nida Stal 4/C50-U50/90/25/Flam+
R90				●	●	●	27,5	Nida Stal 4/C50-U50/90/27,5/Flam+
R90			● ●			●	30	Nida Stal 4/C50-U50/90/30/Flam+
R90	●	● ●	● ● ●	● ●	● ● ●		37,5	Nida Stal 4/C50-U50/90/37,5/Flam+
R120					● ●	● ●	37,5	Nida Stal 4/C50-U50/120/37,5/Flam+
R120			● ●	● ●		● ● ●	40	Nida Stal 4/C50-U50/120/40/Flam+
R120	●	● ●	● ●	● ●	● ●		42,5	Nida Stal 4/C50-U50/120/42,5/Flam+
	231	228 219	226 216 173 142	225 214 172 140	264 222 212 169 138 117 112	262 220 210 168 136 115 110		Massiveness factor U/A

HOLLOW PROFILE ROUND CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	External diameter 244,5	273,0	323,9	Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	Wall thickness				
	5,0 6,0 6,3 8,0 10,0 12,0 12,5 16,0 20,0 25,0	5,0 6,0 6,3 8,0 10,0 12,0 12,5 16,0 20,0 25,0	5,0 6,0 6,3 8,0 10,0		
R15	● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ●	● ● ● ● ●	12,5	Nida Stal 4/C50-U50/15/12,5/Flam+
R30	● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ●	● ● ● ● ●	12,5	Nida Stal 4/C50-U50/30/12,5/Flam+
R60	● ●	● ●		12,5	Nida Stal 4/C50-U50/60/12,5/Flam+
R60	● ● ● ●	● ● ● ●		15	Nida Stal 4/C50-U50/60/15/Flam+
R60	● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ●	● ● ● ● ●	25	Nida Stal 4/C50-U50/60/25/Flam+
R90	● ●	● ●		15	Nida Stal 4/C50-U50/90/15/Flam+
R90	● ● ● ● ● ●	● ● ● ● ●		25	Nida Stal 4/C50-U50/90/25/Flam+
R90	●	●	●	27,5	Nida Stal 4/C50-U50/90/27,5/Flam+
R90	●	●	●	30	Nida Stal 4/C50-U50/90/30/Flam+
R90	● ● ●	● ● ●	● ● ●	37,5	Nida Stal 4/C50-U50/90/37,5/Flam+
R120	●	●		25	Nida Stal 4/C50-U50/120/25/Flam+
R120	●	●		30	Nida Stal 4/C50-U50/120/30/Flam+
R120	● ● ●	● ● ●		37,5	Nida Stal 4/C50-U50/120/37,5/Flam+
R120	● ●	● ● ●	● ● ●	40	Nida Stal 4/C50-U50/120/40/Flam+
R120	● ●	● ●	● ●	42,5	Nida Stal 4/C50-U50/120/42,5/Flam+
	261 218 208 165 133 112 108 86 70 57	260 218 207 164 133 111 108 85 69 56	259 217 206 164 132		Massiveness factor U/A

HOLLOW PROFILE ROUND CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	External diameter 177,8	193,7	219,1	Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	Wall thickness				
	5,0 6,0 6,3 8,0 10,0 12,0 12,5	5,0 6,0 6,3 8,0 10,0 11,0 12,5 16,0	5,0 6,0 6,3 8,0 10,0 12,0 12,5 16,0 20,0		
R15	● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/15/12,5/Flam+
R30	● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/30/12,5/Flam+
R60	● ● ●	● ● ● ● ●	● ● ● ● ● ● ●	15	Nida Stal 4/C50-U50/60/15/Flam+
R60	● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ●	25	Nida Stal 4/C50-U50/60/25/Flam+
R90	● ●	● ● ● ●	● ● ● ● ●	25	Nida Stal 4/C50-U50/90/25/Flam+
R90	●	● ●	●	27,5	Nida Stal 4/C50-U50/90/27,5/Flam+
R90	●	●	●	30	Nida Stal 4/C50-U50/90/30/Flam+
R90	● ● ●	● ● ● ●	● ● ● ● ●	37,5	Nida Stal 4/C50-U50/90/37,5/Flam+
R120	● ●	● ● ● ●	● ● ●	37,5	Nida Stal 4/C50-U50/120/37,5/Flam+
R120	● ● ●	● ● ● ●	● ● ● ● ●	40	Nida Stal 4/C50-U50/120/40/Flam+
R120	● ●	● ● ●	● ●	42,5	Nida Stal 4/C50-U50/120/42,5/Flam+
	263 220 210 167 135 114 110	262 219 209 166 135 123 109 87	261 219 209 166 134 113 109 86 71		Massiveness factor U/A

HOLLOW PROFILE ROUND CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	External diameter 323,9	355,6	406,4	Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	Wall thickness				
	12,0 12,5 16,0 20,0 25,0	6,0 6,3 8,0 10,0 12,0 12,5 16,0 20,0 25,0	6,0 6,3 8,0 10,0 12,0 12,5 16,0 20,0 25,0 30,0 40,0		
R15	● ● ● ● ●	● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/15/12,5/Flam+
R30	● ● ● ● ●	● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ● ● ●	12,5	Nida Stal 4/C50-U50/30/12,5/Flam+
R60	● ●	● ●	● ● ● ●	12,5	Nida Stal 4/C50-U50/60/12,5/Flam+
R60	● ● ●	● ● ● ●	● ● ● ●	15	Nida Stal 4/C50-U50/60/15/Flam+
R60	● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ● ●	25	Nida Stal 4/C50-U50/60/25/Flam+
R90	● ●	● ●	● ● ● ●	15	Nida Stal 4/C50-U50/90/15/Flam+
R90	● ● ● ● ●	● ● ● ● ● ●	● ● ● ● ● ● ●	25	Nida Stal 4/C50-U50/90/25/Flam+
R90	●	●	●	27,5	Nida Stal 4/C50-U50/90/27,5/Flam+
R90	●	●	●	30	Nida Stal 4/C50-U50/90/30/Flam+
R90	● ●	● ● ●	● ● ●	37,5	Nida Stal 4/C50-U50/90/37,5/Flam+
R120	●	●	● ●	15	Nida Stal 4/C50-U50/120/15/Flam+
R120	●	●	● ● ●	25	Nida Stal 4/C50-U50/120/25/Flam+
R120	●	●	●	30	Nida Stal 4/C50-U50/120/30/Flam+
R120	● ● ●	● ● ●	● ● ●	37,5	Nida Stal 4/C50-U50/120/37,5/Flam+
R120	● ●	● ● ●	●	40	Nida Stal 4/C50-U50/120/40/Flam+
R120	●	●	●	42,5	Nida Stal 4/C50-U50/120/42,5/Flam+
R180			● ●	42,5	Nida Stal 4/C50-U50/180/42,5/Flam+
	110 107 84 68 56	216 206 163 131 110 106 84 68 55	216 206 163 131 110 105 83 67 55 46 36		Massiveness factor U/A

HOLLOW PROFILE ROUND CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	External diameter																								Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	457,0											508,0														
	Wall thickness																									
	6,0	6,3	8,0	10,0	12,0	12,5	16,0	20,0	25,0	30,0	40,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	20,0	25,0	30,0	40,0	50,0			
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/C50-U50/15/12,5/Flam+
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/C50-U50/30/12,5/Flam+
R60								●	●	●	●								●	●	●	●	●		12,5	Nida Stal 4/C50-U50/60/12,5/Flam+
R60				●	●	●	●								●	●	●	●							15	Nida Stal 4/C50-U50/60/15/Flam+
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		25	Nida Stal 4/C50-U50/60/25/Flam+
R90								●	●	●	●								●	●	●	●	●		15	Nida Stal 4/C50-U50/90/15/Flam+
R90					●	●	●	●	●	●	●					●	●	●	●	●	●	●	●		25	Nida Stal 4/C50-U50/90/25/Flam+
R90				●											●										27,5	Nida Stal 4/C50-U50/90/27,5/Flam+
R90			●											●											30	Nida Stal 4/C50-U50/90/30/Flam+
R90	●	●										●	●												37,5	Nida Stal 4/C50-U50/90/37,5/Flam+
R120									●	●	●											●	●	●	15	Nida Stal 4/C50-U50/120/15/Flam+
R120								●	●	●											●	●	●	●	25	Nida Stal 4/C50-U50/120/25/Flam+
R120							●												●						30	Nida Stal 4/C50-U50/120/30/Flam+
R120					●	●	●								●	●	●								37,5	Nida Stal 4/C50-U50/120/37,5/Flam+
R120		●	●	●									●	●	●										40	Nida Stal 4/C50-U50/120/40/Flam+
R120	●											●													42,5	Nida Stal 4/C50-U50/120/42,5/Flam+
R180										●	●										●	●	●		42,5	Nida Stal 4/C50-U50/180/42,5/Flam+
	216	205	162	131	109	105	83	67	54	46	35	215	205	162	131	109	105	83	67	54	46	35	29		Massiveness factor U/A	

HOLLOW PROFILE SQUARE CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	Dimensions of square section																								Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100x100						120x120						140x140													
	Wall thickness																									
	4,0	5,0	6,0	6,3	8,0	10,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	5,0	6,0	6,3	8,0	10,0	12,0	12,5						
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60				●	●					●	●	●	●					●	●	●					15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90					●						●	●	●						●	●					25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90				●						●							●								27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90			●	●				●	●							●	●								30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●					●							●											37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120						●					●	●	●						●	●					37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120			●	●	●			●	●	●					●	●	●	●							40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●					●																		42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	264	214	181	173	139	115	212	178	171	137	112	96	93	210	177	169	135	111	94	91					Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

HOLLOW PROFILE SQUARE CROSS-SECTION – 4-SIDED ENCASEMENT

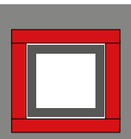
Fire resistance class	Dimensions of square section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	40x40		50x50				60x60				70x70				80x80				90x90									
	Wall thickness																											
	4,0	5,0	4,0	5,0	6,0	6,3	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0			
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90					●	●		●	●	●			●	●	●			●	●	●			●	●	●		30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●	●	●			●				●	●				●	●				●	●					37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120					●	●		●	●	●			●	●	●			●	●	●			●	●	●		40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●	●	●			●				●	●				●	●				●	●					42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	287	238	279	230	197	189	225	191	184	150	270	221	187	180	146	267	218	184	177	143	265	216	182	174	141		Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

HOLLOW PROFILE SQUARE CROSS-SECTION – 4-SIDED ENCASEMENT

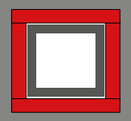
Fire resistance class	Dimensions of square section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	150x150							160x160							180x180													
	Wall thickness																											
	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0				
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60				●	●	●	●	●				●	●	●	●	●				●	●	●	●	●			15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90				●	●	●	●					●	●	●	●						●	●	●	●			25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90			●								●									●							27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90		●	●							●	●							●	●								30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●								●								●										37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120				●	●	●	●					●	●	●	●						●	●	●	●			37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●	●	●					●	●	●	●					●	●	●	●							40	Nida Stal 4/KM-CD60/120/40/Flam+*
	210	176	168	134	110	93	90	73	209	175	168	134	109	93	89	72	208	174	167	133	108	92	88	71			Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE SQUARE CROSS-SECTION – 4-SIDED ENCASEMENT

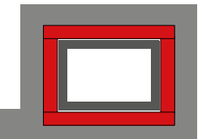
Fire resistance class	Dimensions of square section																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	200x200							220x220							250x250										
	Wall thickness																								
	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0			
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60								●							●							●		12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60				●	●	●	●				●	●	●	●				●	●	●	●			15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90								●							●							●		15	Nida Stal 4/KM-CD60/90/15/Flam+*
R90						●	●	●	●			●	●	●	●				●	●	●	●		25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90				●							●							●						27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90		●	●						●	●						●	●							30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●																							37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120								●							●							●		30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120						●	●	●				●	●	●						●	●	●		37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●	●	●					●	●	●					●	●	●						40	Nida Stal 4/KM-CD60/120/40/Flam+*
	207	174	166	132	107	91	87	70	173	165	131	107	90	87	69	172	164	131	106	89	86	69		Massiveness factor U/A	



HOLLOW PROFILE SQUARE CROSS-SECTION – 4-SIDED ENCASEMENT

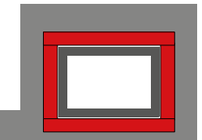
Fire resistance class	Dimensions of square section																									Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	260x260							300x300							350x350							400x400					
	Wall thickness																										
	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	8,0	10,0	12,0	12,5	16,0	10,0	12,0	12,5	16,0	20,0			
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60							●							●					●				●	●		12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60			●	●	●	●				●	●	●	●			●	●	●								15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90							●							●					●				●	●		15	Nida Stal 4/KM-CD60/90/15/Flam+*
R90				●	●	●	●				●	●	●	●		●	●	●	●							25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90			●							●					●											27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90	●	●							●	●																30	Nida Stal 4/KM-CD60/90/30/Flam+*
R120																								●		25	Nida Stal 4/KM-CD60/120/25/Flam+*
R120							●							●					●				●			30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120			●	●	●	●				●	●	●	●			●	●	●								37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●							●	●																40	Nida Stal 4/KM-CD60/120/40/Flam+*
	172	164	130	106	89	86	68	171	164	130	105	88	85	68	129	104	87	84	67	104	87	84	66	54		Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 4-SIDED ENCASEMENT

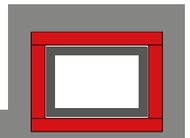
Fire resistance class	Dimensions of rectangular section																													Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	50x30		60x40				80x40					90x50					100x50					100x60								
	Wall thickness																														
	4,0	5,0	4,0	5,0	6,0	6,3	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0					
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90					●	●				●	●				●	●														30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90							●	●				●	●				●	●						●	●					37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120					●	●			●	●	●			●	●	●														40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●	●	●			●	●				●	●				●	●						●	●					42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	287	238	279	230	197	189	274	225	191	184	150	270	221	187	180	146	268	219	186	178	145	267	218	184	177	143				Massiveness factor U/A	



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																													Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	120x60						120x80						140x80						150x100												
	Wall thickness																														
	4,0	5,0	6,0	6,3	8,0	10,0	4,0	5,0	6,0	6,3	8,0	10,0	4,0	5,0	6,0	6,3	8,0	10,0	4,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5					
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60						●					●	●					●	●					●	●	●	●				15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90						●						●						●						●	●	●				25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90										●							●						●							27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90			●	●	●				●	●					●	●					●	●								30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●					●	●					●	●					●	●										37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120						●						●						●						●	●	●				37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120			●	●	●				●	●	●				●	●	●				●	●	●							40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●					●	●					●	●					●	●										42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	265	216	182	174	141	117	264	214	181	173	139	115	262	213	179	172	138	114	261	211	178	170	136	112	95	92				Massiveness factor U/A	

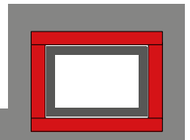
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																									Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	160x80								180x100								200x100										
	Wall thickness																										
	4,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	4,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	4,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60					●	●	●	●					●	●	●	●					●	●	●	●	●	15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90						●	●	●						●	●	●						●	●	●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90					●								●								●					27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90			●	●							●	●							●	●						30	Nida Stal 4/KM-CD60/90/30/Flam+*
R90	●	●							●	●							●	●								37,5	Nida Stal 4/KM-CD60/90/37,5/Flam+*
R120						●	●	●						●	●	●						●	●	●	●	37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120			●	●	●						●	●	●	●					●	●	●	●				40	Nida Stal 4/KM-CD60/120/40/Flam+*
R120	●	●							●								●									42,5	Nida Stal 4/KM-CD60/120/42,5/Flam+*
	261	212	178	171	137	112	96	93	260	210	177	169	135	111	94	91	259	210	176	168	134	110	93	90	73	Massiveness factor U/A	

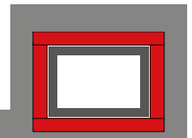
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																									Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	200x120						250x150						260x180						300x200								
	Wall thickness																										
	6,0	6,3	8,0	10,0	12,0	12,5	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60													●							●							●	12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60				●	●	●				●	●	●	●				●	●	●	●				●	●	●	●		15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90													●							●							●	15	Nida Stal 4/KM-CD60/90/15/Flam+*
R90				●	●	●				●	●	●	●				●	●	●	●				●	●	●	●	●	25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90			●						●							●							●					27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90	●	●					●	●						●	●						●	●						30	Nida Stal 4/KM-CD60/90/30/Flam+*
R120													●							●							●	30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120				●	●	●				●	●	●					●	●	●					●	●	●		37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●	●				●	●	●					●	●	●					●	●	●					40	Nida Stal 4/KM-CD60/120/40/Flam+*
	175	168	134	109	93	89	174	166	132	107	91	87	70	173	165	131	107	90	87	69	172	164	131	106	89	86	69	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 4-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																									Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	350x250							400x200						450x250					500x300								
	Wall thickness																										
	6,0	6,3	8,0	10,0	12,0	12,5	16,0	8,0	10,0	12,0	12,5	16,0	8,0	10,0	12,0	12,5	16,0	10,0	12,0	12,5	16,0	20,0					
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				12,5	Nida Stal 4/KM-CD60/30/12,5/Flam+*
R60							●					●					●				●	●				12,5	Nida Stal 4/KM-CD60/60/12,5/Flam+*
R60			●	●	●	●		●	●	●	●		●	●	●	●		●	●	●						15	Nida Stal 4/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				25	Nida Stal 4/KM-CD60/60/25/Flam+*
R90							●					●					●				●	●				15	Nida Stal 4/KM-CD60/90/15/Flam+*
R90			●	●	●	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●				25	Nida Stal 4/KM-CD60/90/25/Flam+*
R90						●					●					●										27,5	Nida Stal 4/KM-CD60/90/27,5/Flam+*
R90	●	●																				●				30	Nida Stal 4/KM-CD60/90/30/Flam+*
R120							●					●					●				●					30	Nida Stal 4/KM-CD60/120/30/Flam+*
R120			●	●	●	●		●	●	●	●		●	●	●	●		●	●	●						37,5	Nida Stal 4/KM-CD60/120/37,5/Flam+*
R120	●	●																								40	Nida Stal 4/KM-CD60/120/40/Flam+*
	157	150	119	96	81	78	62	130	105	88	85	68	129	104	87	84	67	104	87	84	66	54				Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

steel **beams**

NORMAL TYPE I DOUBLE-T SECTIONS – 3-SIDED ENCASEMENT

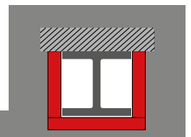
Fire resistance class	Double-T section dimensions - IPN																	Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	300	340	360	400	450	500	550	600		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60															●	●	●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60							●	●	●	●	●	●	●	●				15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90															●	●	●	15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90									●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90							●	●										27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90				●	●	●	●											30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●	●																37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120																	●	25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120															●	●		30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120								●	●	●	●	●	●	●				37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120		●	●	●	●	●	●											40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●																	42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	236	210	191	173	159	147	137	128	119	106	95	89	81	73	67	62	56	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

DOUBLE-T SECTIONS TYPE IPE – 3-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions - IPE																Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	270	300	330	360	400	450	500	550	600		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60										●	●	●	●	●	●	●	●	15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90													●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90										●	●	●						27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90				●	●	●	●	●	●									30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●	●	●															37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120												●	●	●	●	●	●	37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120				●	●	●	●	●	●	●	●							40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●	●	●															42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	248	231	216	200	189	176	165	154	148	140	131	123	116	111	104	98	92	Massiveness factor U/A	

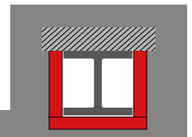
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



DOUBLE-T SECTIONS TYPE HEA – 3-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions - HEA																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60														●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●												15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90	●	●	●																						27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R120														●	●	●	●	●	●	●	●	●	●	●	30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120			●	●	●	●	●	●	●	●	●	●	●												37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120	●	●																							40	Nida Stal 3/KM-CD60/120/40/Flam+*
	138	138	130	120	116	108	100	92	88	85	78	75	73	70	68	67	65	66	66	66	65	66	65	66	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



DOUBLE-T SECTIONS TYPE HEB – 3-SIDED ENCASEMENT

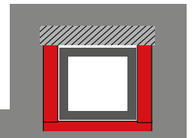
Fire resistance class	Double-T section dimensions - HEB																							Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60	●	●	●	●	●	●	●																		15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R120												●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120								●	●	●	●														30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120	●	●	●	●	●	●	●																		37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
	116	106	98	89	83	77	73	68	67	65	61	59	58	57	56	56	55	56	56	56	56	57	57	58	Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

DOUBLE-T SECTIONS TYPE HEM – 3-SIDED ENCASEMENT

Fire resistance class	Double-T section dimensions - HEM																									Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100	120	140	160	180	200	220	240	260	280	300	320	340	360	400	450	500	550	600	650	700	800	900	1000		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R90	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	Nida Stal 3/KM-CD60/90/15/Flam+*
R120								●	●	●	●	●	●	●	●	●	●	●	●	●	●				15	Nida Stal 3/KM-CD60/120/15/Flam+*
R120			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120	●	●																							30	Nida Stal 3/KM-CD60/120/30/Flam+*
R180								●	●	●	●	●	●	●	●	●	●	●	●	●	●				42,5	Nida Stal 3/KM-CD60/180/42,5/Flam+*
	66	62	58	55	52	50	48	40	39	38	33	33	34	35	36	38	40	41	43	44	46	48	51	53		Massiveness factor U/A

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE SQUARE CROSS-SECTION – 3-SIDED ENCASEMENT

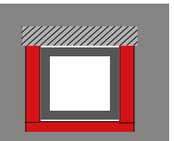
Fire resistance class	Dimensions of square section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	40x40		50x50			60x60			70x70			80x80				90x90												
	Wall thickness																											
	4,0	5,0	4,0	5,0	6,0	6,3	4,0	5,0	6,0	6,3	8,0	3,0	4,0	5,0	6,0	6,3	8,0	3,0	4,0	5,0	6,0	6,3	8,0	4,0	5,0	6,0	6,3	8,0		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60									●	●					●	●	●				●	●	●			●	●	●	15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90										●						●						●					●		25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90									●	●					●	●					●	●				●	●		27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90		●		●	●			●					●					●	●					●	●					30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●		●				●					●	●					●						●					37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120									●						●						●						●		37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120		●	●	●	●	●	●	●	●			●	●	●	●			●	●	●	●			●	●	●	●		40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●									●						●													42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	215	179	209	172	148	142	205	169	143	138	113	265	202	166	140	135	110	263	200	164	138	133	108	199	162	137	131	106		Massiveness factor U/A

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

HOLLOW PROFILE SQUARE CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of square section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	100x100					120x120						140x140																
	Wall thickness																											
	4,0	5,0	6,0	6,3	8,0	10,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	5,0	6,0	6,3	8,0	10,0	12,0	12,5								
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60													●							●							12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60			●	●	●	●		●	●	●	●	●			●	●	●	●	●								15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90													●							●							15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90				●	●					●	●	●	●				●	●	●	●							25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90			●	●				●	●						●	●											27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90	●	●					●							●													30	Nida Stal 3/KM-CD60/90/30/Flam+*
R120													●							●							30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120				●	●	●				●	●	●				●	●	●	●								37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120	●	●	●				●	●						●	●												40	Nida Stal 3/KM-CD60/120/40/Flam+*
	198	161	136	130	105	86	159	134	128	103	84	72	70	158	133	127	101	83	71	68								Massiveness factor U/A

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE SQUARE CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of square section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	150x150							160x160							180x180												
	Wall thickness																											
	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	5,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0				
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60						●	●	●						●	●	●						●	●	●			12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60		●	●	●	●					●	●	●	●					●	●	●	●						15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90						●	●	●						●	●	●						●	●	●			15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90				●	●	●	●	●			●	●	●	●	●					●	●	●	●	●			25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90		●	●							●	●							●	●								27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90	●							●									●										30	Nida Stal 3/KM-CD60/90/30/Flam+*
R120							●																	●			25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120						●	●						●	●									●	●			30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120			●	●	●					●	●	●						●	●	●							37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120	●	●							●	●							●	●									40	Nida Stal 3/KM-CD60/120/40/Flam+*
	157	132	126	101	82	70	68	55	157	132	126	100	82	70	67	54	156	131	125	100	81	69	66	53				Massiveness factor U/A

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

HOLLOW PROFILE SQUARE CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of square section																								Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	200x200							220x220							250x250											
	Wall thickness																									
	5.0	6.0	6.3	8.0	10.0	12.0	12.5	16.0	6.0	6.3	8.0	10.0	12.0	12.5	16.0	6.0	6.3	8.0	10.0	12.0	12.5	16.0				
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60						●	●	●					●	●	●					●	●	●			12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60		●	●	●	●				●	●	●	●				●	●	●	●						15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90						●	●	●					●	●	●					●	●	●			15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90				●	●	●	●	●		●	●	●	●	●				●	●	●	●	●			25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90		●	●						●	●						●	●								27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90	●																								30	Nida Stal 3/KM-CD60/90/30/Flam+*
R120							●							●								●			25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120						●	●						●	●						●	●				30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120		●	●	●	●				●	●	●	●				●	●	●	●						37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120	●																								40	Nida Stal 3/KM-CD60/120/40/Flam+*
	156	130	124	99	81	68	66	53	130	124	99	80	68	65	52	129	123	98	80	67	65	52			Massiveness factor U/A	

HOLLOW PROFILE SQUARE CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of square section																												Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	260x260							300x300							350x350							400x400								
	Wall thickness																													
	6.0	6.3	8.0	10.0	12.0	12.5	16.0	6.0	6.3	8.0	10.0	12.0	12.5	16.0	8.0	10.0	12.0	12.5	16.0	10.0	12.0	12.5	16.0	20.0						
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60					●	●	●					●	●	●			●	●	●		●	●	●	●					12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60	●	●	●	●				●	●	●	●				●	●				●									15	Nida Stal 3/KM-CD60/60/15/Flam+*
R90					●	●	●					●	●	●			●	●	●		●	●	●	●					15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90			●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90	●	●						●	●																				27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R120																								●					15	Nida Stal 3/KM-CD60/120/15/Flam+*
R120						●							●					●					●	●						25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120					●	●					●	●					●	●				●	●								30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120	●	●	●	●				●	●	●	●				●	●				●											37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R180																								●							42,5	Nida Stal 3/KM-CD60/180/42,5/Flam+*
	129	123	98	79	67	64	51	129	123	97	79	66	64	51	97	78	66	63	50	78	65	63	50	40					Massiveness factor U/A	

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.

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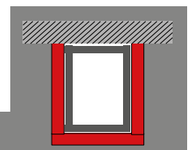
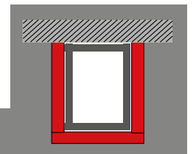


HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 3-SIDED ENCASEMENT

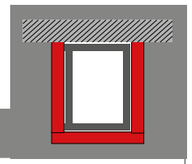
Fire resistance class	Dimensions of rectangular section																												Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	50x30		60x40				80x40					90x50					100x50						100x60							
	Wall thickness																													
	4.0	5.0	4.0	5.0	6.0	6.3	4.0	5.0	6.0	6.3	8.0	4.0	5.0	6.0	6.3	8.0	4.0	5.0	6.0	6.3	8.0	4.0	5.0	6.0	6.3	8.0				
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60											●	●	●	●	●	●					●					●			15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90																●										●			25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90											●													●					27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90		●		●	●	●		●	●	●			●	●	●			●	●	●			●	●	●			30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●		●				●					●					●					●						37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120											●					●								●			●	37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120		●		●	●	●		●	●	●			●	●	●			●	●	●			●	●	●			40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●		●				●					●					●					●						42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	233	194	223	184	157	151	228	187	159	153	125	222	182	154	148	120	224	183	155	148	121	217	177	150	144	117			Massiveness factor U/A	



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	120x60						120x80						140x80						150x100									
	Wall thickness																											
	4.0	5.0	6.0	6.3	8.0	10.0	4.0	5.0	6.0	6.3	8.0	10.0	4.0	5.0	6.0	6.3	8.0	10.0	4.0	5.0	6.0	6.3	8.0	10.0	12.0	12.5		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60				●	●					●	●	●				●	●					●	●	●	●	●	15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90				●	●					●	●					●	●					●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90										●												●					27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90		●	●	●				●	●					●	●	●				●	●						30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●						●						●						●								37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120					●	●					●	●					●	●					●	●	●	●	37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120		●	●	●				●	●	●				●	●	●				●	●	●	●				40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●						●						●						●								42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	221	180	152	145	118	98	211	172	145	138	112	92	215	174	147	141	113	93	209	169	142	136	109	90	76	74		
																											Massiveness factor U/A	

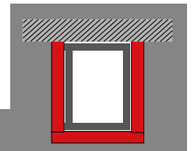
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	160x80							180x100							200x100													
	Wall thickness																											
	4.0	5.0	6.0	6.3	8.0	10.0	12.0	12.5	4.0	5.0	6.0	6.3	8.0	10.0	12.0	12.5	4.0	5.0	6.0	6.3	8.0	10.0	12.0	12.5	16.0		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60																									●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60					●	●	●	●				●	●	●	●	●					●	●	●	●		15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90																									●	15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90					●	●	●	●					●	●	●	●					●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90												●								●						27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90		●	●	●					●	●								●	●							30	Nida Stal 3/KM-CD60/90/30/Flam+*
R90	●									●							●									37,5	Nida Stal 3/KM-CD60/90/37,5/Flam+*
R120																									●	30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120					●	●	●	●				●	●	●	●	●					●	●	●	●		37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120		●	●	●					●	●	●							●	●	●						40	Nida Stal 3/KM-CD60/120/40/Flam+*
R120	●								●								●									42,5	Nida Stal 3/KM-CD60/120/42,5/Flam+*
	218	177	149	142	114	94	80	77	213	173	145	139	111	91	77	75	216	175	147	140	112	92	78	75	61		Massiveness factor U/A

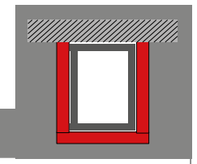
* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																										Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	200x120						250x150						260x180						300x200									
	Wall thickness																											
	6,0	6,3	8,0	10,0	12,0	12,5	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0	6,0	6,3	8,0	10,0	12,0	12,5	16,0		
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60													●						●	●						●	●	12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●			●	●	●	●	●			15	Nida Stal 3/KM-CD60/60/15/Flam+*
R60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	Nida Stal 3/KM-CD60/60/25/Flam+*
R90													●						●	●						●	●	15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90			●	●	●	●			●	●	●	●	●			●	●	●	●	●			●	●	●	●	●	25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90		●						●						●	●						●	●						27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R90	●						●																					30	Nida Stal 3/KM-CD60/90/30/Flam+*
R120													●						●								●	25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120																			●							●		30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120			●	●	●	●			●	●	●	●				●	●	●					●	●	●			37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R120	●	●					●	●						●	●						●	●						40	Nida Stal 3/KM-CD60/120/40/Flam+*
	143	136	109	89	75	73	141	135	107	87	74	71	57	138	132	105	85	72	69	55	138	132	105	85	71	69	55		Massiveness factor U/A

* It is acceptable to replace those with the CB fixing clips along with the MFCE26 profiles as the system structure for the steel load-bearing structure encasement.



HOLLOW PROFILE RECTANGULAR CROSS-SECTION – 3-SIDED ENCASEMENT

Fire resistance class	Dimensions of rectangular section																												Required thickness of sheathing [mm]	Nida Stal system recommended for utilisation
	350x250							400x200						450x250						500x300										
	Wall thickness																													
	6.0	6.3	8.0	10.0	12.0	12.5	16.0	8.0	10.0	12.0	12.5	16.0	8.0	10.0	12.0	12.5	16.0	10.0	12.0	12.5	16.0	20.0								
R15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							12,5	Nida Stal 3/KM-CD60/15/12,5/Flam+*
R30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							12,5	Nida Stal 3/KM-CD60/30/12,5/Flam+*
R60					●	●	●					●				●	●			●	●	●							12,5	Nida Stal 3/KM-CD60/60/12,5/Flam+*
R60	●	●	●	●				●	●	●	●		●	●	●			●	●										15	Nida Stal 3/KM-CD60/60/15/Flam+*
R90					●	●	●					●				●	●			●	●	●							15	Nida Stal 3/KM-CD60/90/15/Flam+*
R90			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							25	Nida Stal 3/KM-CD60/90/25/Flam+*
R90	●	●																											27,5	Nida Stal 3/KM-CD60/90/27,5/Flam+*
R120																						●							15	Nida Stal 3/KM-CD60/120/15/Flam+*
R120						●					●						●				●	●							25	Nida Stal 3/KM-CD60/120/25/Flam+*
R120					●	●																							30	Nida Stal 3/KM-CD60/120/30/Flam+*
R120	●	●	●	●				●	●	●	●		●	●	●			●	●										37,5	Nida Stal 3/KM-CD60/120/37,5/Flam+*
R180																						●							42,5	Nida Stal 3/KM-CD60/180/42,5/Flam+*
	129	123	97	79	66	64	51	108	87	73	71	56	106	86	72	69	55	84	71	68	54	44							Massiveness factor U/A	

calculations for steel structures

Calculating the minimal thickness of the Nida Flam Plus plasterboard sheathing layer

Calculation of the minimal thickness of the sheathing is necessary for the steel profiles for which the sheathing thickness was calculated and provided, but a different critical temperature for the steel was determined in the design in reference to the temperature determined in the fire classification: ITB 1060/18/R125NZP. In order to calculate the minimal thickness of the sheathing the following steps must be followed:

1. calculate the index of exposure for the U/A of the steel profile,
2. select the table which refers to the required fire resistance,
3. select the column with the appropriate critical temperature of steel,
4. select the line with the U/A coefficient which contains the value calculated in point 1,
5. find the required sheathing thickness at the intersection.

Calculating the index of exposure for U/A

The cross-section exposition coefficient U/A is the ration of the heated perimeter U, equal to the external perimeter of the applied sheathing of boards, to the heated area A, equal to the area of the cross-section of the profile. The U/A coefficient depends on the manner in which fire acts on the profile, so:

A.
For fire exposition from four sides – for columns:

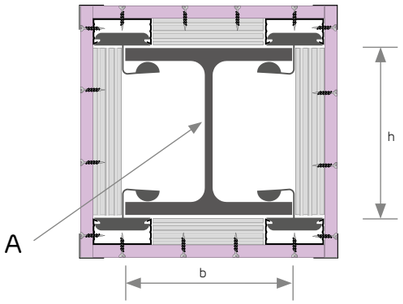
$$U/A = \frac{(2*h + 2*b)}{A} \ [m^{-1}]$$

where:
h – height of profile in metres.
b – width of profile in metres.
a – area of profile cross-section in m^2.

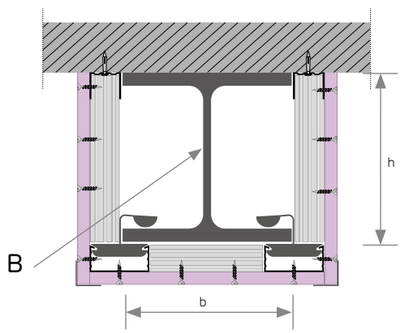
B.
For fire exposition from four sides – for columns:

$$U/A = \frac{(2*h + b)}{A} \ [m^{-1}]$$

where:
h – height of profile in metres.
b – width of profile in metres.
a – area of profile cross-section in m^2.



Drawing 1



Drawing 2

minimal **sheathing thickness**

The required values of the protective layer thickness for the single-layered arrangementjednowarstwowym

The required thickness of the protection layer according to the Nida Stal system, depending on the coefficient of exposition and the design temperature for steel elements, for the open and hollow profiles, for the single-layer arrangements.

FIRE RESISTANCE CLASS R15 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m^{-1}]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤80	12,5	12,5	12,5	12,5	0	0	0	0
81-90	12,5	12,5	12,5	12,5	12,5	0	0	0
91-100	12,5	12,5	12,5	12,5	12,5	0	0	0
101-110	12,5	12,5	12,5	12,5	12,5	12,5	0	0
111-120	12,5	12,5	12,5	12,5	12,5	12,5	0	0
121-130	12,5	12,5	12,5	12,5	12,5	12,5	12,5	0
131-140	12,5	12,5	12,5	12,5	12,5	12,5	12,5	0
141-364	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5
>364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R30 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m^{-1}]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤ 140	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5
141-170	15	12,5	12,5	12,5	12,5	12,5	12,5	12,5
171-210	15	15	12,5	12,5	12,5	12,5	12,5	12,5
211-260	15	15	15	12,5	12,5	12,5	12,5	12,5
261-310	15	15	15	15	12,5	12,5	12,5	12,5
311-364	15	15	15	15	15	12,5	12,5	12,5
> 364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R60 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m^{-1}]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤50	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5
51-60	15	15	12,5	12,5	12,5	12,5	12,5	12,5
61-70	15	15	15	12,5	12,5	12,5	12,5	12,5
71-80	15	15	15	15	12,5	12,5	12,5	12,5
81-90	-	15	15	15	15	12,5	12,5	12,5
91-100	-	15	15	15	15	15	12,5	12,5
101-110	-	-	15	15	15	15	15	12,5
111-120	-	-	15	15	15	15	15	15
121-140	-	-	-	15	15	15	15	15
141-160	-	-	-	-	15	15	15	15
161-180	-	-	-	-	-	15	15	15
181-200	-	-	-	-	-	-	15	15
201-230	-	-	-	-	-	-	-	15
>230	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R90 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤47	15	15	15	15	12,5	12,5	12,5	12,5
48-50	-	15	15	15	15	12,5	12,5	12,5
51-60	-	-	15	15	15	15	15	12,5
61-70	-	-	-	15	15	15	15	15
71-80	-	-	-	-	15	15	15	15
81-90	-	-	-	-	-	15	15	15
91-100	-	-	-	-	-	-	15	15
101-110	-	-	-	-	-	-	-	15
>110	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R120 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤47	-	-	15	15	15	15	15	12,5
48-50	-	-	-	15	15	15	15	15
51-60	-	-	-	-	-	15	15	15
61-70	-	-	-	-	-	-	15	15
>70	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R180 – SINGLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤47	-	-	-	-	-	-	-	15
>47	-	-	-	-	-	-	-	-

The required values of the protective layer thickness for the double- and triple-layered arrangement

The required thickness of the protection layer according to the Nida Stal system, depending on the coefficient of exposition and the design temperature of steel elements, for the open and hollow profiles, for the multi-layered arrangements.

FIRE RESISTANCE CLASS R15 – DOUBLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤80	25	25	25	25	0	0	0	0
81-90	25	25	25	25	25	0	0	0
91-100	25	25	25	25	25	0	0	0
101-110	25	25	25	25	25	25	0	0
111-120	25	25	25	25	25	25	0	0
121-130	25	25	25	25	25	25	25	0
131-140	25	25	25	25	25	25	25	0
141-364	25	25	25	25	25	25	25	25
>364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R30 – DOUBLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤ 364	25	25	25	25	25	25	25	25
> 364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R60 – DOUBLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤ 160	25	25	25	25	25	25	25	25
161-210	27,5	25	25	25	25	25	25	25
211-280	27,5	27,5	25	25	25	25	25	25
281-290	30	27,5	25	25	25	25	25	25
291-364	30	27,5	27,5	25	25	25	25	25
>364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R90 – DOUBLE- AND TRIPLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤70	25	25	25	25	25	25	25	25
71-80	27,5	25	25	25	25	25	25	25
81-100	30	27,5	25	25	25	25	25	25
101-120	37,5	30	27,5	25	25	25	25	25
121-130	37,5	30	30	27,5	25	25	25	25
131-140	37,5	37,5	30	27,5	25	25	25	25
141-160	37,5	37,5	30	30	27,5	25	25	25
161-180	37,5	37,5	37,5	30	27,5	27,5	25	25
181-190	37,5	37,5	37,5	30	30	27,5	25	25
191-200	37,5	37,5	37,5	30	30	27,5	27,5	25
201-220	37,5	37,5	37,5	37,5	30	27,5	27,5	25
221-230	37,5	37,5	37,5	37,5	30	30	27,5	25
231-260	37,5	37,5	37,5	37,5	30	30	27,5	27,5
261-270	37,5	37,5	37,5	37,5	37,5	30	27,5	27,5
271-340	37,5	37,5	37,5	37,5	37,5	30	30	27,5
341-350	37,5	37,5	37,5	37,5	37,5	30	30	30
351-364	37,5	37,5	37,5	37,5	37,5	37,5	30	30
>364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R120 – DOUBLE- AND TRIPLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤47	27,5	25	25	25	25	25	25	25
48-50	30	25	25	25	25	25	25	25
51-60	37,5	27,5	25	25	25	25	25	25
61-70	37,5	37,5	30	25	25	25	25	25
71-80	37,5	37,5	37,5	30	25	25	25	25
81-90	37,5	37,5	37,5	37,5	30	25	25	25
91-100	40	37,5	37,5	37,5	30	27,5	25	25
101-110	40	37,5	37,5	37,5	37,5	30	27,5	25
111-120	40	40	37,5	37,5	37,5	37,5	30	27,5
121-130	42,5	40	37,5	37,5	37,5	37,5	30	27,5
131-150	42,5	40	40	37,5	37,5	37,5	37,5	30
151-160	42,5	40	40	37,5	37,5	37,5	37,5	37,5
161-170	42,5	42,5	40	37,5	37,5	37,5	37,5	37,5
171-180	42,5	42,5	40	40	37,5	37,5	37,5	37,5
181-210	42,5	42,5	40	40	37,5	37,5	37,5	37,5
211-220	45	42,5	42,5	40	37,5	37,5	37,5	37,5
221-310	45	42,5	42,5	40	40	37,5	37,5	37,5
311-364	45	45	42,5	42,5	40	40	37,5	37,5
>364	-	-	-	-	-	-	-	-

FIRE RESISTANCE CLASS R180 – DOUBLE- AND TRIPLE-LAYER PROTECTION

Coefficient of exposure [m⁻¹]	Design temperature							
	350°C	400°C	450°C	500°C	550°C	600°C	650°C	700°C
≤47	-	45	42,5	40	37,5	30	30	27,5
48-50	-	-	-	45	40	37,5	30	30
51-60	-	-	-	-	-	45	40	37,5
61-70	-	-	-	-	-	-	45	40
71-80	-	-	-	-	-	-	-	45
>80	-	-	-	-	-	-	-	-