

3. The Movorail rails

3.1 Rails

There are five different straight rail sizes, SPR 85, SPR 125, SPR160A, SPR295B (with reinforcement profile) and SPR295W (with welded reinforcement profile). Further to this sizes 85, 125 and 160A also comes in a curved versions (SPB). The reinforcement profile SPF 135 can also be delivered separately and be installed afterwards on top of a SPR 160A with the aid of the T-slot profile TSS to create a rail of type SPR295B. The max. allowed load for each profile depends on the distance between the suspensions, see point 18.3.

For installations to the T-slots of the rails there is a series of T-slot bolts in different lengths. Size TBM 8 is used for SPR 85 while TBM 12 is used for the others. Note! Only this type of bolt may be used for attachments to the rail T-slots.

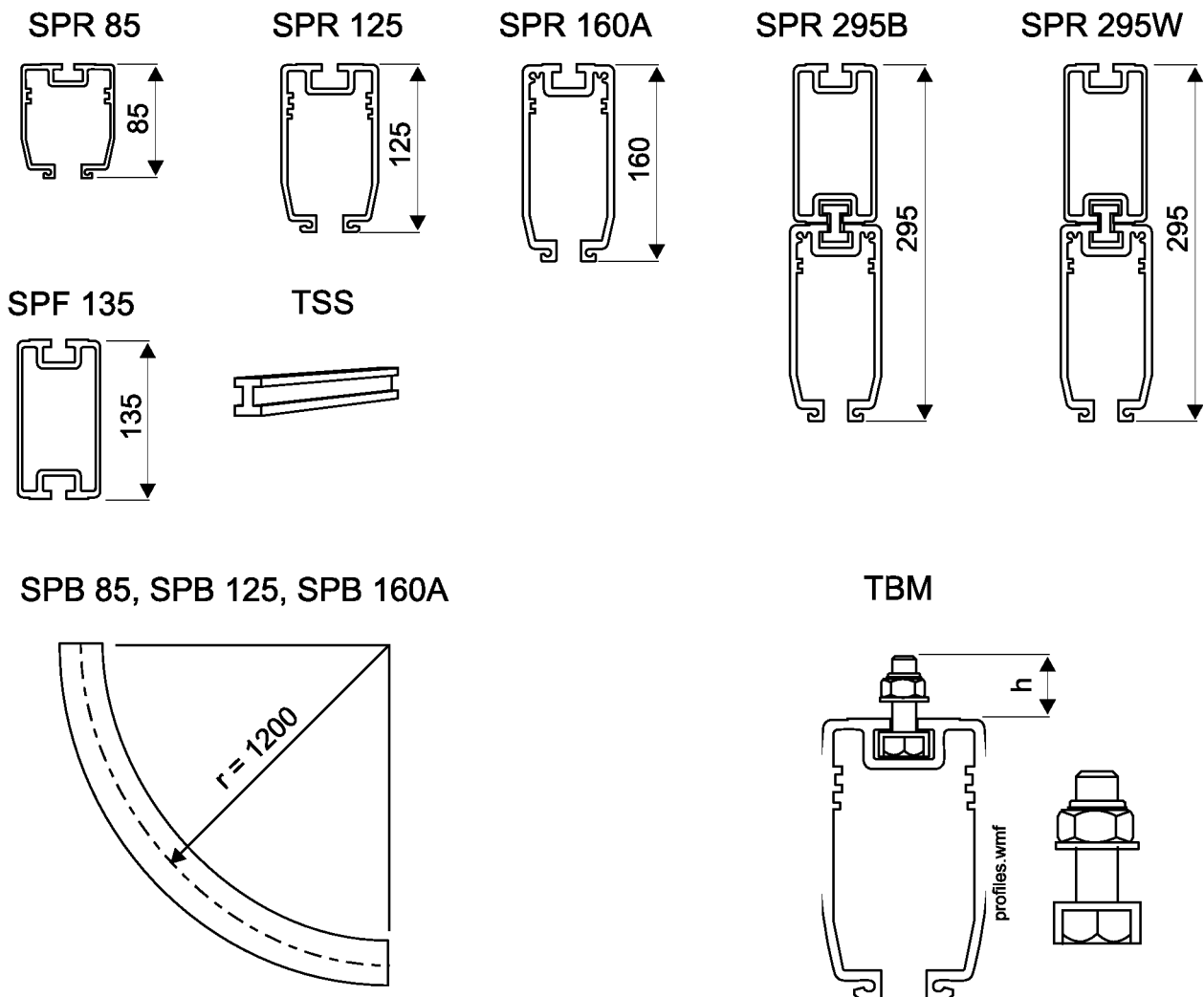


Figure 3: profiles and T-slot bolts

3.2 Attachment of reinforcement profile type SPF 135

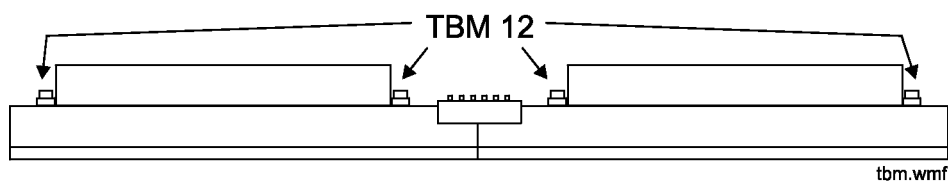


Figure 4: how to secure the T-slot profile

At SPR295B or at installation of reinforcement profile in the reinforcement profile must be fixed so that it can not move. Installing T-slot bolts on both sides of the reinforcement profile prevents it from moving.

18. Technical data

18.1 Data for the Movorail profiles

	SPR 85	SPR 125	SPR 160A	SPR 295B	SPR 295W	SPF 135
Material	Anodised extruded aluminium					
Colour	Natural aluminium					
X (mm)	85	125	160	295	295	135
C (mm)	68,8	71,5	73,5	73,5	73,5	70
Standard profile lengths (m)	4 / 5 / 6 / 8	4 / 5 / 6 / 8	4 / 5 / 6 / 8	4 / 5 / 6 / 8	4 / 5 / 6 / 8	3,6 / 4,6 / 5,6
Inertia (cm ⁴)	97	333	812	1368	3700	556
Weight / meter (kg/m)	3	5	7,8	14	14,1	6,2
Profile area (cm ²)	11	18,6	28,7	51,5	51,5	22,8
Modulus of elasticity (N/mm ²)	70 000	70 000	70 000	70 000	70 000	70 000

Table 8: profile data

SPR 85, SPR 125, SPR 160A

SPR 295B, SPR 295W

SPF 135

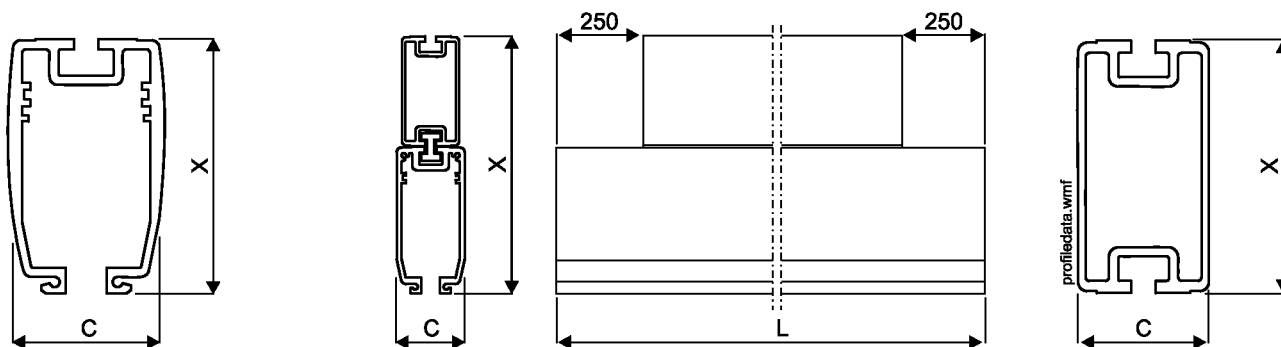


Figure 38: profile dimensions

18.2 Tightening torque for bolts

The table is valid for both normal bolts and T-slot bolts. The bolt grade is normally embossed on the bolt heads, see the figure below. We recommend using at least bolt grade 8.8. Use a calibrated torque wrench to gauge the torque.

Bolt dimension	Grade	Zinc-pl. dry	Zinc-pl. oiled
M6	8.8	9,4 Nm	8,4 Nm
M8	8.8	23,0 Nm	20,6 Nm
M10	8.8	45,1 Nm	40,4 Nm
M12	8.8	77,8 Nm	69,7 Nm
M16	12.9	319,6 Nm	286,3 Nm

Table 9: tightening torque for bolts

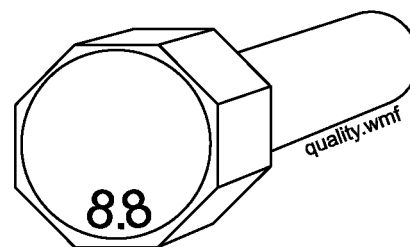


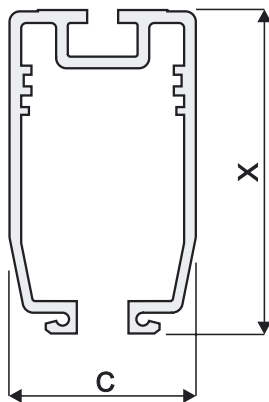
Figure 39: bolt grade

Technische Daten für Schienenprofile

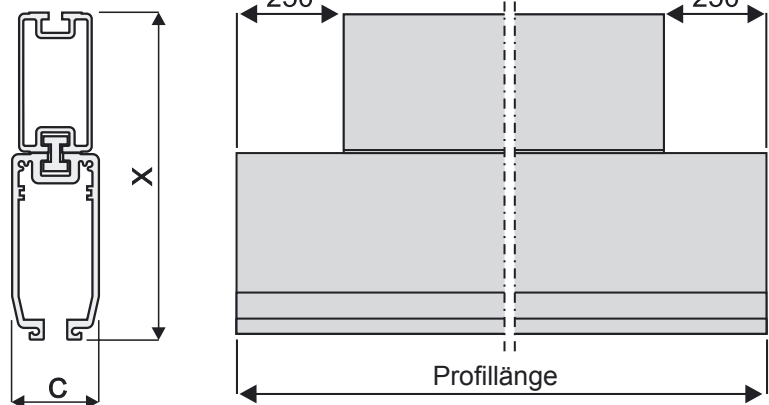
	SPR 85	SPR 125	SPR 160A	SPR 295B	SPR 295W
X [mm]	85	125	160	295	295
C [mm]	68,8	71,5	73,5	73,5	73,5
Profillängen [m]*	4, 5, 6, 8	4, 5, 6, 8	4, 5, 6, 8	4, 5, 6, 8	4, 5, 6, 8
Trägheit [cm ⁴]	97	333	812	1368	3700
Gewicht/Meter [kg/m]	3	5	7,8	14	14,1

*Längere Schienen sind auf Anfrage erhältlich.

SPR 85, SPR 125, SPR 160A

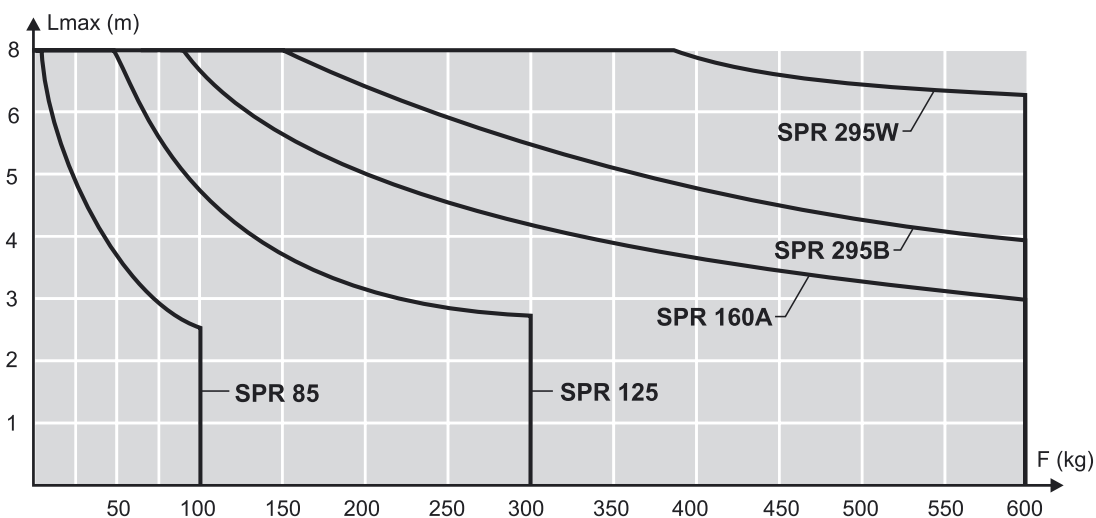
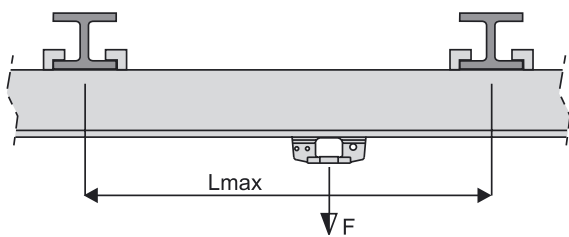


SPR 295B, SPR 295W

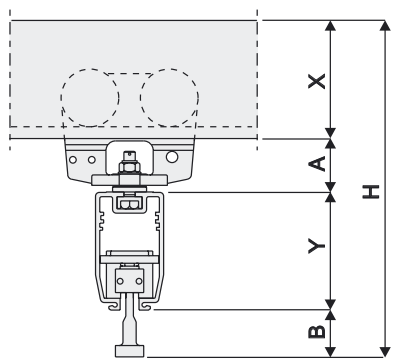


Maximal zulässige Durchbiegung der Schienen

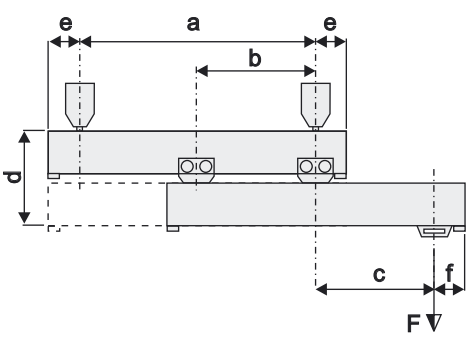
Das Diagramm basiert auf einer maximalen Durchbiegung von 1/500 der Distanz zwischen den Aufhängungen (L_{max}).



Installationsabmessungen für Standardsysteme mit BGV-Wagen [mm]

X-Profil	Y-Profil	X	Y	A	B	H	
SPR 85	SPR 85	85	85	57,5	52	279,5	
SPR 85	SPR 125	85	125	58,5	49,5	318	
SPR 85	SPR 160A	85	160	58,5	45	348,5	
SPR 125	SPR 85	125	85	55	52	317	
SPR 125	SPR 125	125	125	56	49,5	355,5	
SPR 125	SPR 160A	125	160	56	45	386	
SPR 160A	SPR 85	160	85	50,5	52	347,5	
SPR 160A	SPR 125	160	125	51,5	49,5	386	
SPR 160A	SPR 160A	160	160	51,5	45	416,5	
SPR 295B(W)	SPR 85	295	85	50,5	52	482,5	
SPR 295B(W)	SPR 125	295	125	51,5	49,5	521	
SPR 295B(W)	SPR 160A	295	160	51,5	45	551,5	

Installationsabmessungen und Belastbarkeit für Systeme mit ausfahrbarer Kranschiene [mm]*

X-Profil	Y-Profil	a	b	c	d	e	f	Max. Last F [N]	
SPR 85	SPR 85	2000	1000	1000	229	250	200	400	
SPR 85	SPR 85	3000	1500	1000	229	250	200	300	
SPR 85	SPR 85	4000	2000	1000	229	250	200	250	
SPR 125	SPR 125	2000	1000	1000	307	250	200	1400	
SPR 125	SPR 125	3000	1500	1000	307	250	200	1000	
SPR 125	SPR 125	4000	2000	1000	307	250	200	900	
SPR 160A	SPR 160A	2000	1000	1000	372	250	200	3000	
SPR 160A	SPR 160A	3000	1500	1000	372	250	200	2500	
SPR 160A	SPR 160A	4000	2000	1000	372	250	200	2000	

*In der obigen Tabelle sind nur einige Beispiele für die zahlreichen Kombinationsmöglichkeiten von Lasten und Abmessungen aufgeführt.