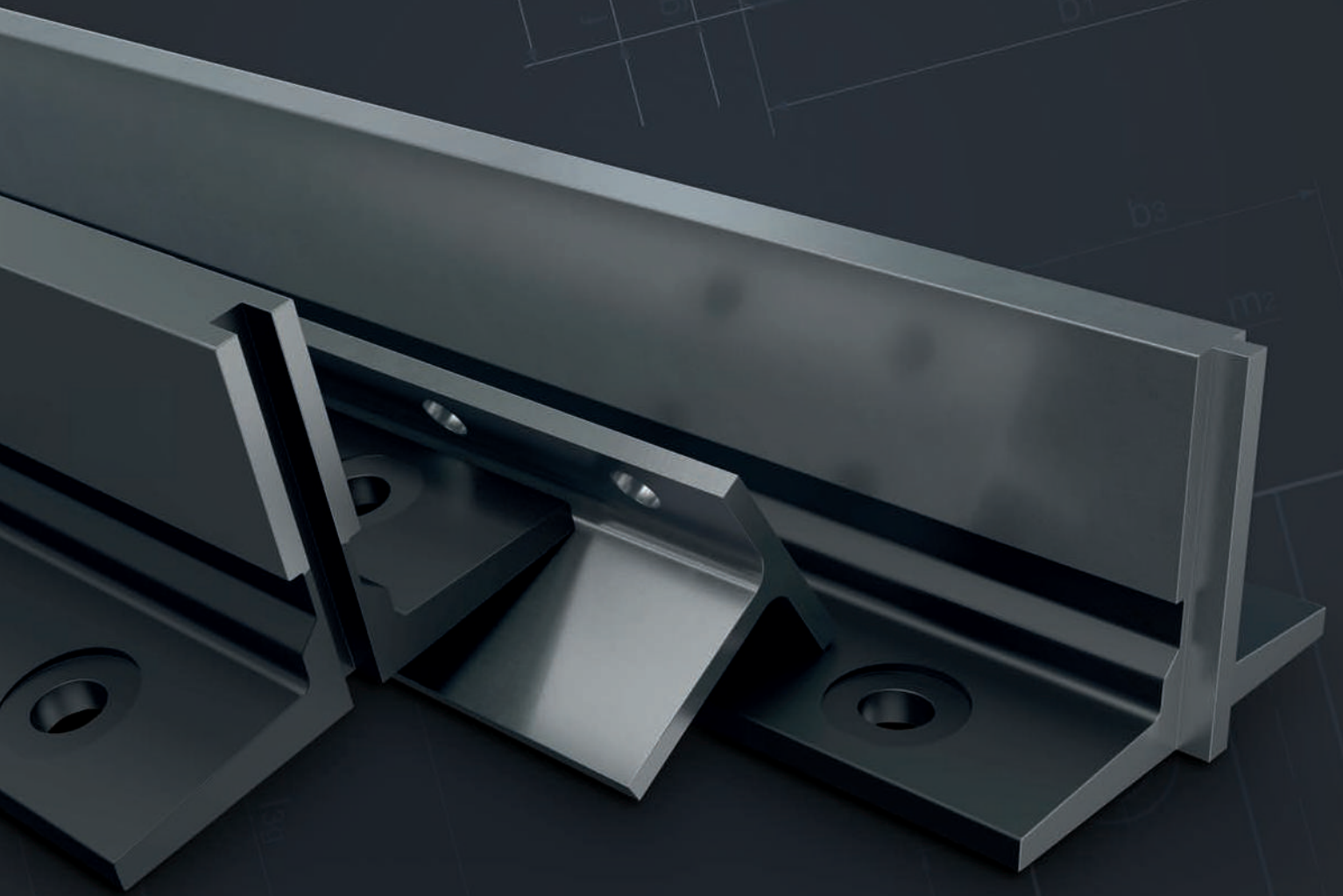


ELEVATOR GUIDE RAILS





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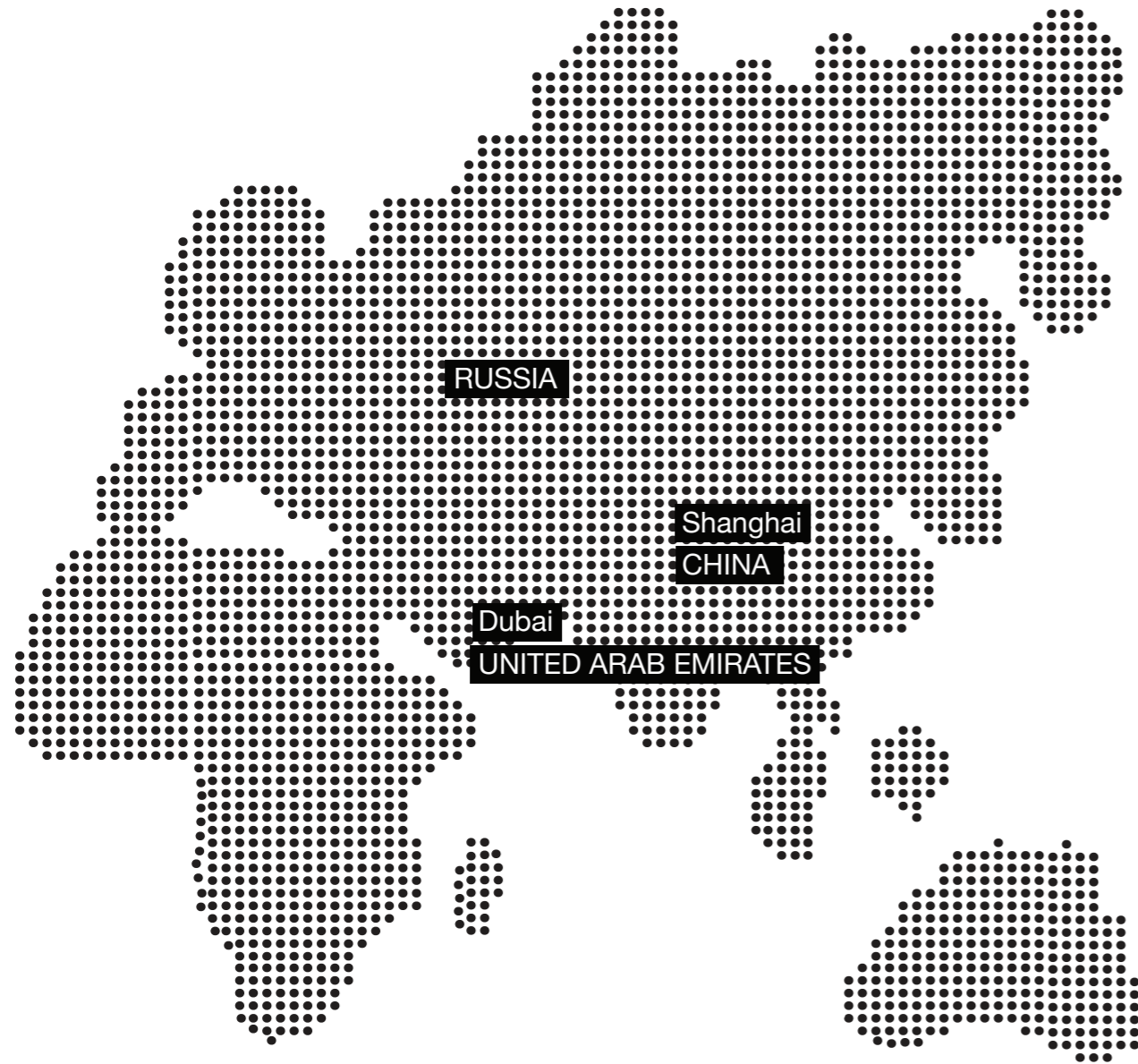
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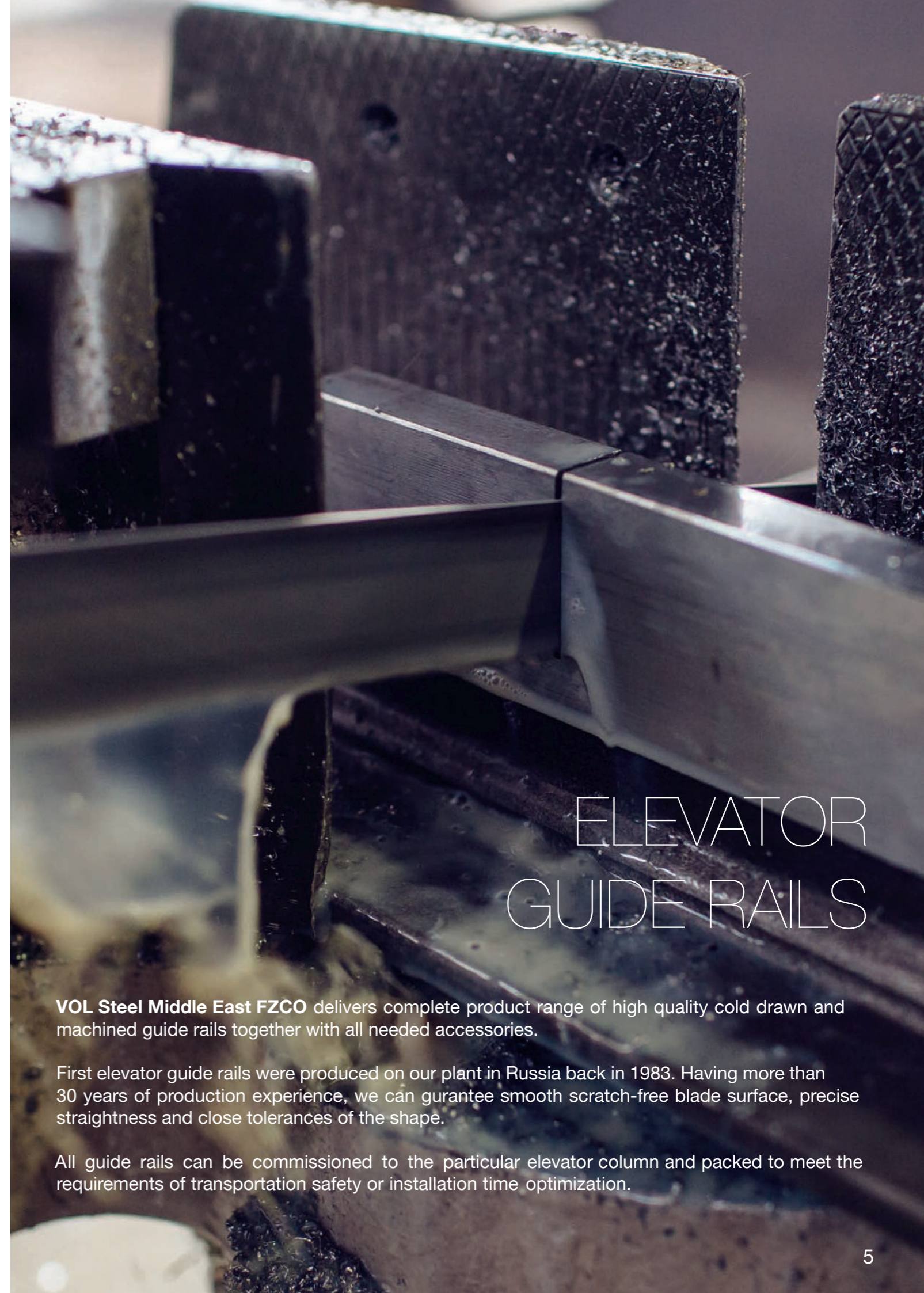


COMPANY

VOL Steel Middle East FZCO is official supplier of hot rolled and cold drawn special steel profiles with the production plant in Russia.

Our production site in Russia, is a complete steel mill with its own steel-making furnaces, rolling mills, cold drawing benches and milling machines. Modern production equipment and rich experience gathered through decades cover the production process on all stages of the value chain and provide a unique capability to control quality of manufactured products and adjust their properties, if required.

In particular our melting shop and modern rolling mills represent our main competitive advantage. We are not only able to manufacture special profiles with high accuracy and defect free surface, but also can choose freely between a wide range of steel grades and their chemical composition, which in case they do not fit to our customers specific requirements can be modified easily.



ELEVATOR GUIDE RAILS

VOL Steel Middle East FZCO delivers complete product range of high quality cold drawn and machined guide rails together with all needed accessories.

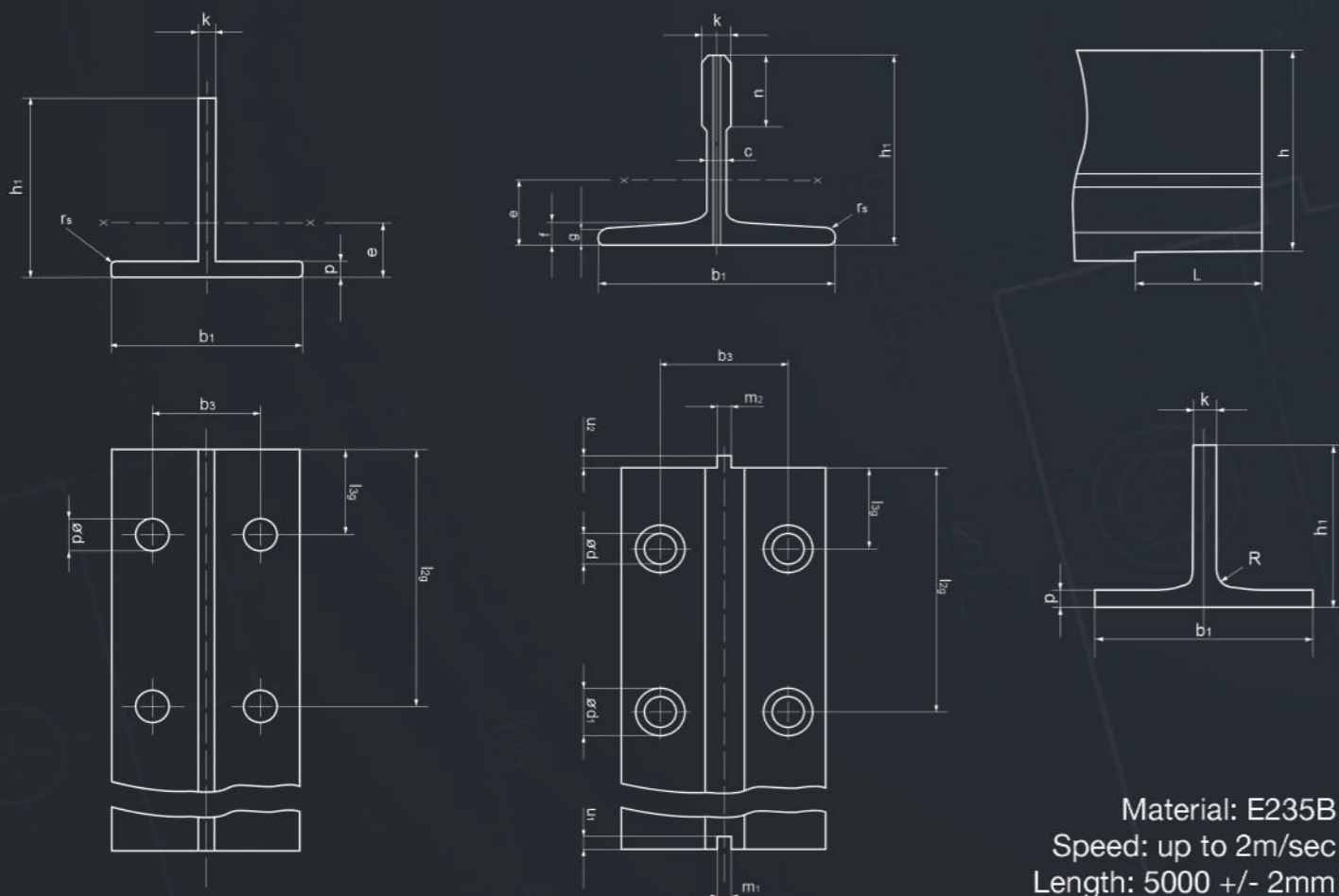
First elevator guide rails were produced on our plant in Russia back in 1983. Having more than 30 years of production experience, we can guarantee smooth scratch-free blade surface, precise straightness and close tolerances of the shape.

All guide rails can be commissioned to the particular elevator column and packed to meet the requirements of transportation safety or installation time optimization.



COLD DRAWN GUIDE RAILS (A)

Cold drawn guide rails are used for counterweights or elevators that move with relatively low speeds, normally up to 1,6 m/s. VOL Steel Middle East deliveries all sizes of the elevator guide rails according to ISO 7465, as well as specialties, such as RO50.9 and RO70.9



COLD DRAWN GUIDE RAILS (A)

Technical characteristics of cold-drawn, paralell foot-and-blade flange guide rails

Designation	S cm ²	q ₁ kg/m	e cm	I _{xx} cm ⁴	W _{xx} cm ³	i _{xx} cm	I _{yy} cm ⁴	W _{yy} cm ³	i _{yy} cm
T45/A	4,25	3,34	1,31	8,08	2,53	1,38	3,84	1,71	0,95
RO 45 M/A	4,25	3,34	1,31	8,08	2,53	1,38	3,84	1,71	0,95
T50/A	4,75	3,73	1,43	11,24	3,15	1,54	5,25	2,10	1,05
RO 50 M/A	4,75	3,73	1,43	11,24	3,15	1,54	5,25	2,10	1,05
RO 50.9/A	7,07	5,55	1,70	17,36	5,26	1,57	7,02	2,81	0,99
RO 70.9/A	11,25	8,83	2,11	52,81	1,79	2,16	24,62	7,03	1,48

Dimensions and tolerances of cold-drawn, paralell foot-and-blade flange guide rails

Designation	b ₁	h ₁	k	n	c	r _s	m ₁	m ₂	u ₁	u ₂	d	b ₃	l _{2g}	l _{3g}	f	g	d ₁
T45/A	45,00	45,00	5,00	-	-	1,00	-	-	-	-	9,00	25,00	65,00	15,00	-	-	-
RO45M/A	45,00	45,00	5,00	-	-	1,00	2,00	1,95	2,50	2,00	9,00	25,00	65,00	15,00	-	-	-
T50/A	50,00	45,00	5,00	-	-	1,00	-	-	-	-	9,00	30,00	75,00	25,00	-	-	-
RO50M/A	50,00	45,00	5,00	-	-	1,00	2,00	1,95	2,50	2,00	9,00	30,00	75,00	25,00	-	-	-
Tolerances	± 1	± 0,2	± 0,15	-	-	-	+0,06	-0,06	± 0,1	± 0,1	-	± 0,2	± 0,2	± 0,2	-	-	-
RO50.9/A	50,00	50,00	9,00	35,00	7,50	1,00	3,00	2,95	3,50	3,00	9,00	30,00	75,00	25,00	-	-	-
RO70.9/A	70,00	70,00	9,00	35,00	7,90	1,50	3,00	2,95	3,50	3,00	13,00	42,00	90,00	30,00	-	-	-
Tolerances	± 1,5	± 0,1	+ 0,1	+3,0	-	-	+0,06	-0,06	± 0,1	± 0,1	-	± 0,2	± 0,2	± 0,2	-	-	-

Dimensions in millimetres

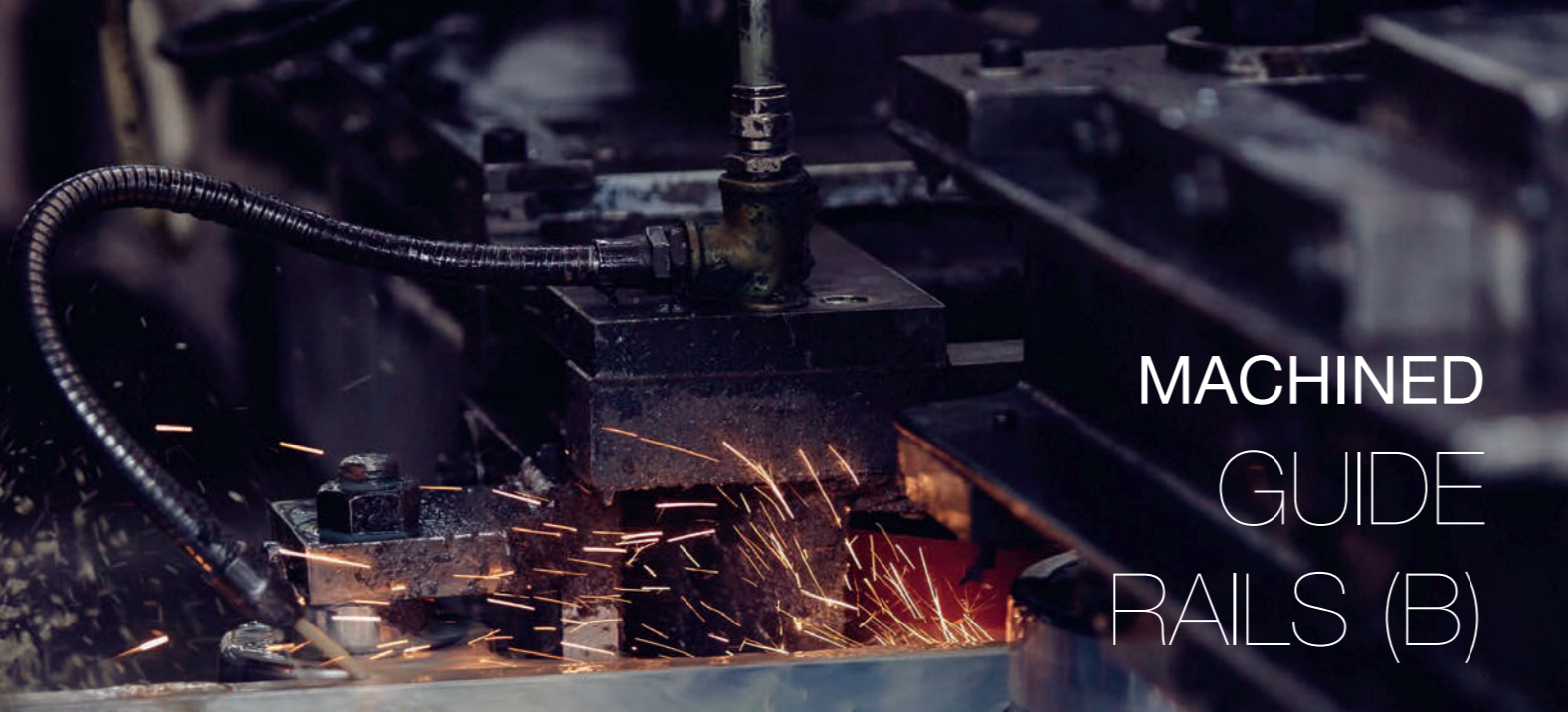
Technical characteristics of cold-drawn, inclined-foot flange guide rails

Designation	S cm ²	q ₁ kg/m	e cm	I _{xx} cm ⁴	W _{xx} cm ³	i _{xx} cm	I _{yy} cm ⁴	W _{yy} cm ³	i _{yy} cm
T70-1/A	9,40	7,38	2,03	40,95	9,17	2,09	18,86	5,39	1,42
T82/A	10,91	8,56	2,00	49,31	10,27	2,12	30,17	7,36	1,66
T89/A	15,77	12,38	2,03	59,83	14,35	1,95	52,41	11,78	1,82
T90/A	17,25	13,54	2,61	102,00	20,86	2,43	52,48	11,66	1,74
T125/A	22,83	17,90	2,43	151,00	26,20	2,57	159,00	25,40	2,64

Technical characteristics of cold-drawn, inclined-foot flange guide rails

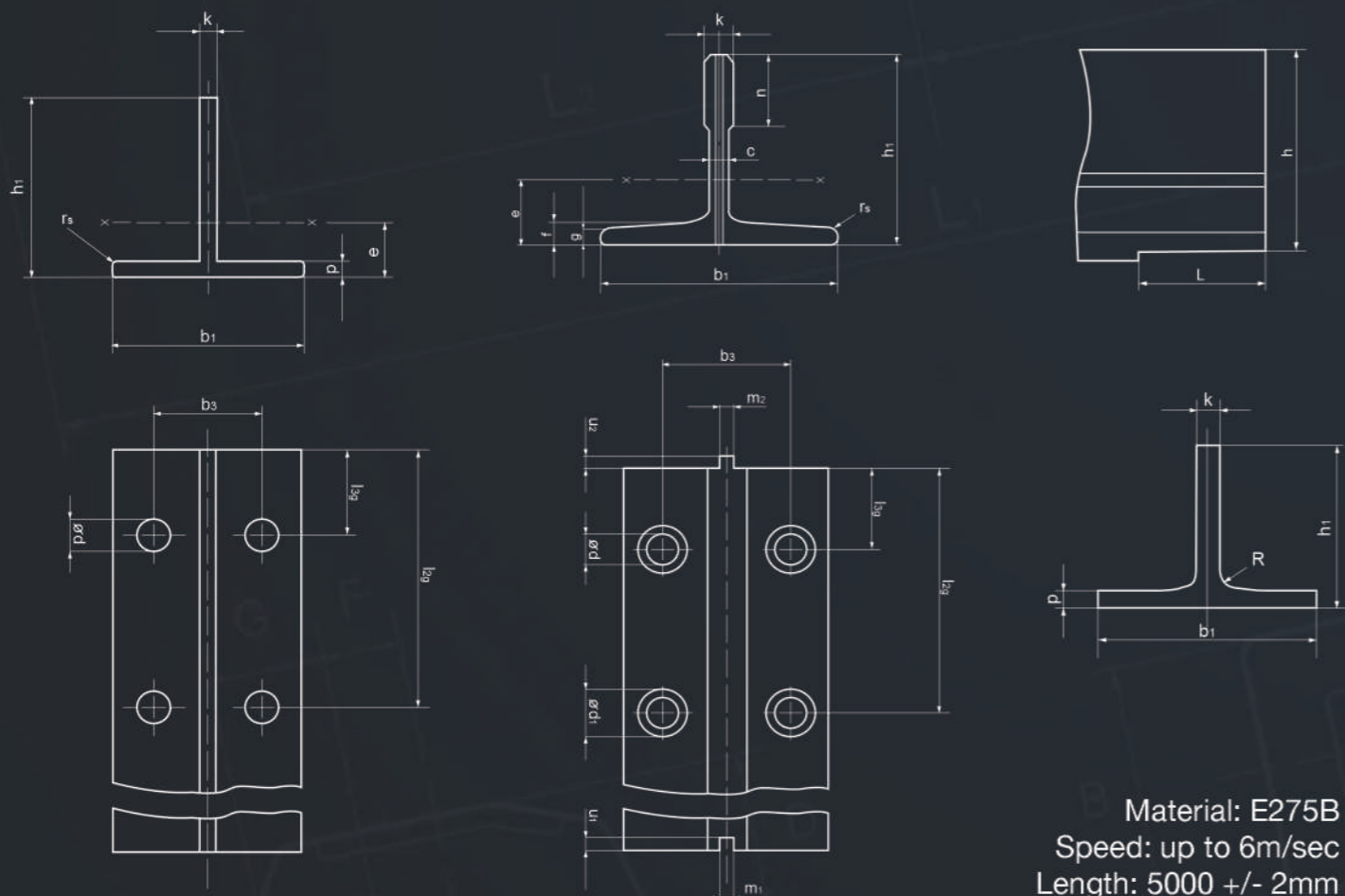
Designation	b ₁	h ₁	k	n	c	f	g	r _s	m ₁	m ₂	u ₁	u ₂	d	d ₁	b ₃	l _{2g}	l _{3g}
T70-1/A	70,00	65,00	9,00	34,00	6,00	8,00	6,00	1,50	3,00	2,97	3,50	3,00	13,00	26,00	42,00	105,00	25,00
T82/A	82,00	68,00	9,00	34,00	7,50	8,25	6,00	3,00	3,00	2,97	3,50	3,00	13,00	26,00	50,80	81,00	27,00
T89/A	89,00	62,00	16,00	34,00	10,00	11,10	7,90	3,00	6,40	6,37	7,14	6,35	13,00	26,00	57,20	114,30	38,10
T90/A	90,00	75,00	16,00	42,00	10,00	10,00	8,00	4,00	6,40	6,37	7,14	6,35	13,00	26,00	57,20	114,30	38,10
T125/A	125,00	82,00	16,00	42,00	10,00	12,00	9,00	4,00	64,0	6,37	7,14	6,35	17,00	33,00	79,40	114,30	38,10
Tolerance	± 1,5	± 0,1	+ 0,1	+3,0	-	± 0,75	± 0,75	-	+0,06	-0,06	± 0,1	± 0,1	-	-	± 0,2	± 0,2	± 0,2

Dimensions in millimetres



MACHINED GUIDE RAILS (B)

Machined guide rails have smoother surface of the blade in comparison with cold drawn guides and, therefore, are better suited for elevators with higher speed and heavy loads.



Material: E275B
Speed: up to 6m/sec
Length: 5000 +/- 2mm

MACHINED GUIDE RAILS (B)

Technical characteristics for machined guide rails

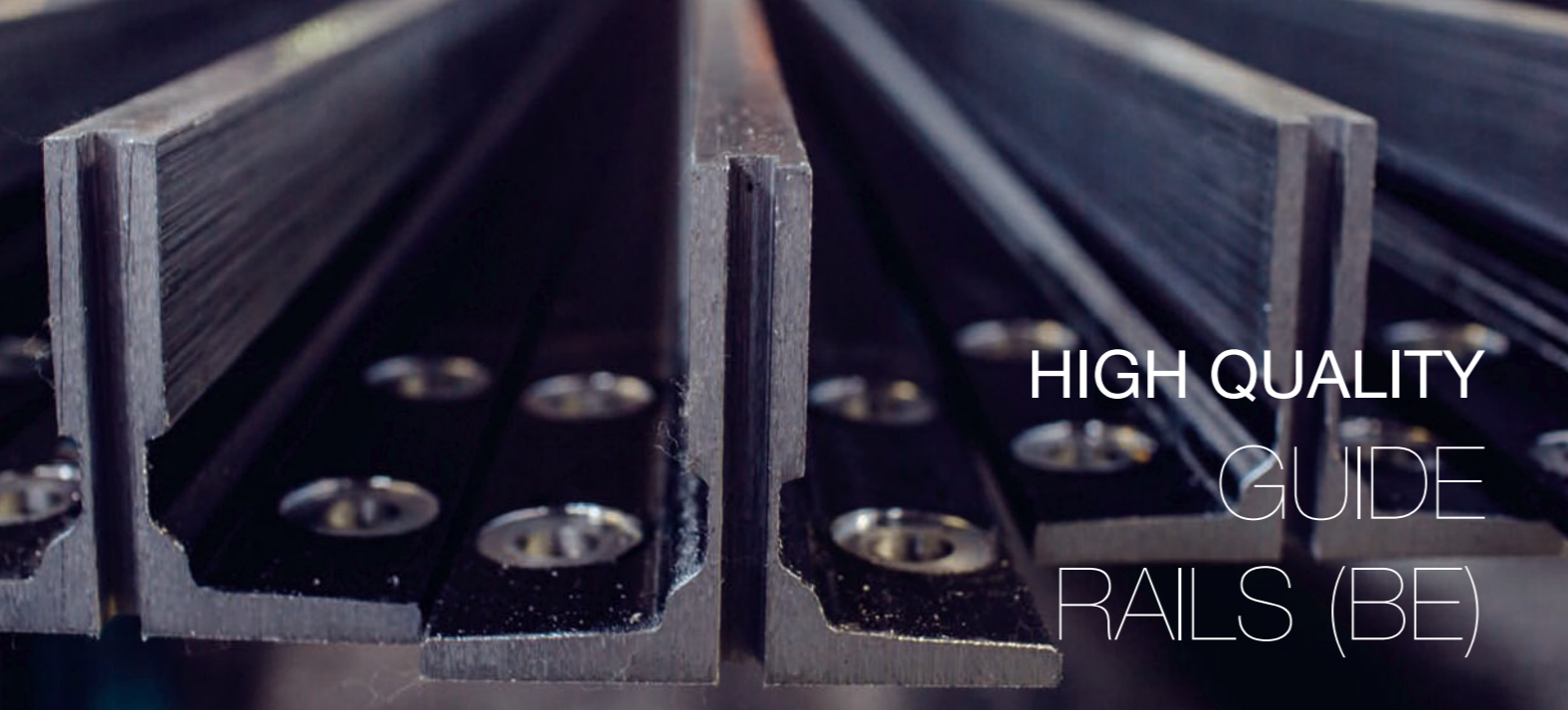
Designation	S cm ²	q ₁ kg/m	e cm	I _{x-x} cm ⁴	W _{x-x} cm ³	i _{x-x} cm	I _{y-y} cm ⁴	W _{y-y} cm ³	i _{y-y} cm
T75-3/B 1997	10,99	8,63	1,86	40,35	9,29	1,92	26,49	7,06	1,55
T75/B 2007	10,91	8,56	1,86	40,29	9,29	1,92	26,47	7,06	1,56
T89/B 1997	15,70	12,30	20,02	59,83	14,25	1,95	52,40	11,80	1,83
T89/B 2007	15,77	12,38	2,03	59,83	14,35	1,95	52,41	11,78	1,82
T90/B	17,25	13,54	2,61	102,00	20,86	2,43	52,48	11,66	1,74
T125/B	22,82	17,91	2,43	151,00	26,16	2,57	159,10	25,46	2,64
T127-2/B	28,72	22,55	2,48	201,70	31,17	2,64	229,90	36,20	2,83
RO127-2c14/B 1997	28,63	22,48	2,47	198,40	30,90	2,63	230,00	36,20	2,83
RO127-2c14/B 2007	28,72	22,55	2,48	201,70	31,17	2,64	229,90	36,20	2,83
T140-1/B	35,15	27,59	3,24	403,30	53,32	3,39	309,70	44,24	2,97
T140-2/B	43,21	33,92	3,48	456,70	68,01	3,25	358,20	51,18	2,88

Dimensions and tolerances of machined guide rails

Designation	b ₁	h ₁	k	n	c	f	g	r _s	m ₁	m ₂
T75-3/B 1997	75,00	62,00	10,00	30,00	8,00	9,00	7,00	3,00	3,00	2,95
T75/B 2007	75,00	62,00	10,00	30,00	8,00	9,00	7,00	3,00	3,00	2,97
T89/B 1997	89,00	62,00	15,88	33,40	10,00	11,10	7,90	3,00	6,40	6,37
T89/B 2007	89,00	52,00	16,00	34,00	10,00	11,10	7,90	3,00	6,40	6,37
T90/B	90,00	75,00	16,00	42,00	10,00	10,00	8,00	4,00	6,40	6,37
T125/B	125,00	82,00	16,00	42,00	10,00	12,00	8,00	4,00	6,40	6,37
T127-2/B	127,00	89,00	16,00	51,00	10,00	15,90	12,70	5,00	6,40	6,37
RO127-2c14/B 1997	127,00	89,00	15,88	51,00	14,00	15,90	12,70	5,00	6,40	6,37
RO127-2c14/B 2007	127,00	89,00	16,00	51,00	14,00	15,90	12,70	5,00	6,40	6,37
T140-1/B	140,00	108,00	19,00	51,00	12,70	15,90	12,70	5,00	6,40	6,37
T140-2/B	140,00	102,00	18,60	51,00	17,50	15,90	12,70	5,00	6,40	6,37
Tolerances	± 1,5	± 0,75	± 0,1	+3,0	-	± 0,75	± 0,75	-	+0,06	-0,06

Designation	u ₁	u ₂	d	d ₁	b ₃	l _{2g}	l _{3g}	l	h
T75-3/B 1997	3,50	3,00	13,00	26,00	43,00	90,00	30,00	123,00	61,00
T75/B 2007	3,50	3,50	13,00	26,00	42,00	105,00	25,00	138,00	61,00
T89/B 1997	7,14	6,34	13,00	26,00	57,20	114,30	38,10	156,00	61,00
T89/B 2007	7,14	6,35	13,00	26,00	57,20	114,30	38,10	156,00	61,00
T90/B	7,14	6,35	13,00	26,00	57,20	114,30	38,10	156,00	74,00
T125/B	7,14	6,35	17,00	33,00	79,40	114,30	38,10	156,00	81,00
T127-2/B	7,14	6,35	17,00	33,00	79,40	114,30	38,10	156,00	88,00
RO127-2c14/B 1997	7,14	6,35	17,00	33,00	79,40	114,30	38,10	156,00	88,00
RO127-2c14/B 2007	7,14	6,35	17,00	33,00	79,40	114,30	38,10	156,00	88,00
T140-1/B	7,14	6,35	21,00	40,00	92,10	152,40	31,80	193,00	107,00
T140-2/B	7,14	6,35	21,00	40,00	92,10	152,40	31,80	193,00	101,00
Tolerances	± 0,1	± 0,1	-	-	± 0,2	± 0,2	± 0,2	+3,0	± 0,1

Dimensions in millimetres

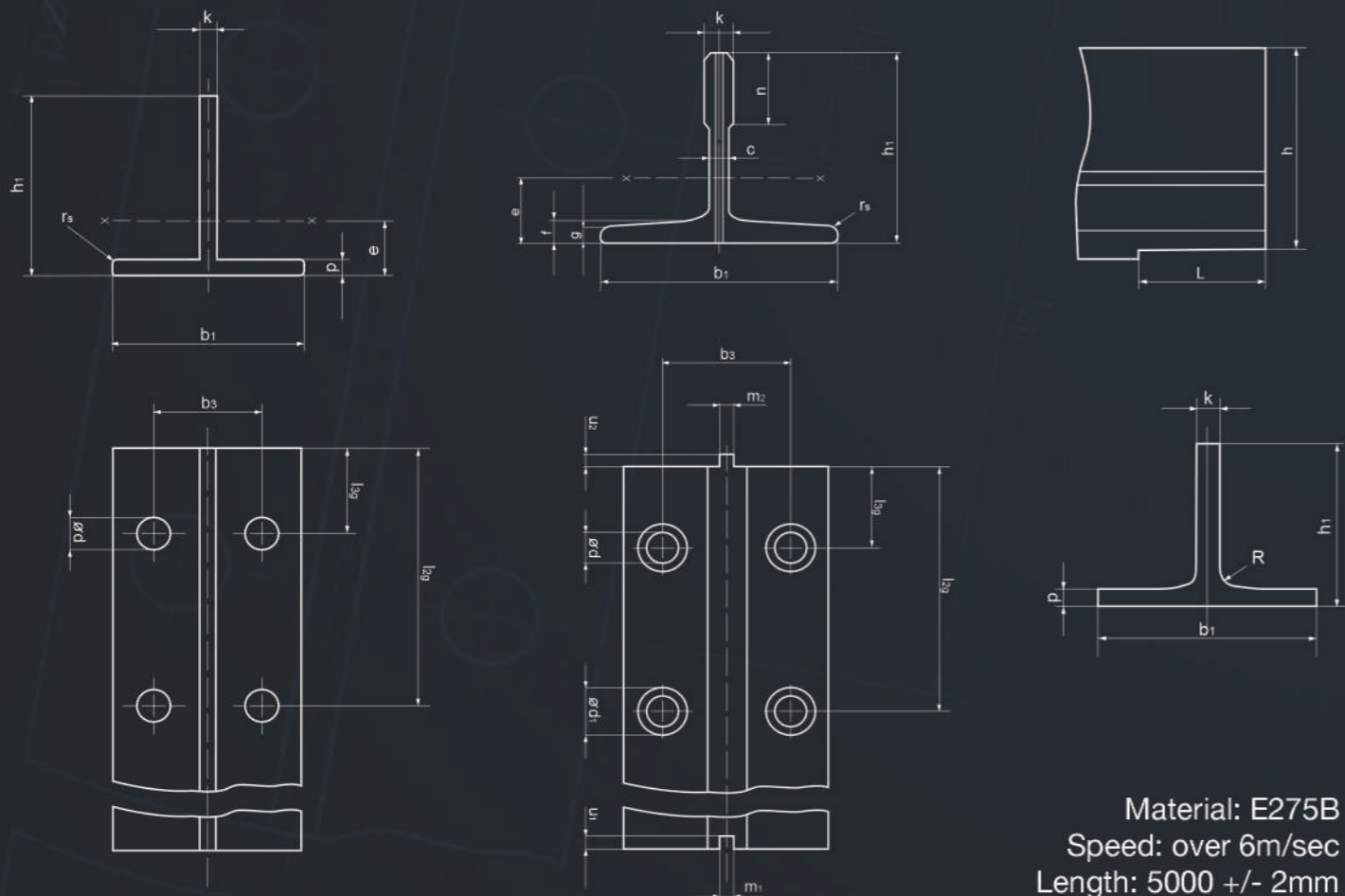


HIGH QUALITY GUIDE RAILS (BE)

Excellent geometry, high smoothness of the surface, perfect joining - these are the requirements of high quality machined guide rails.

Tightened tolerances in conjunction with outstanding mechanical properties of the material are the key factors for the safety in the environment of extraordinary pressures and speed.

Dimensions in millimetres



Material: E275B
Speed: over 6m/sec
Length: 5000 +/- 2mm

HIGH QUALITY GUIDE RAILS (BE)

Technical characteristics for high quality machined guide rails

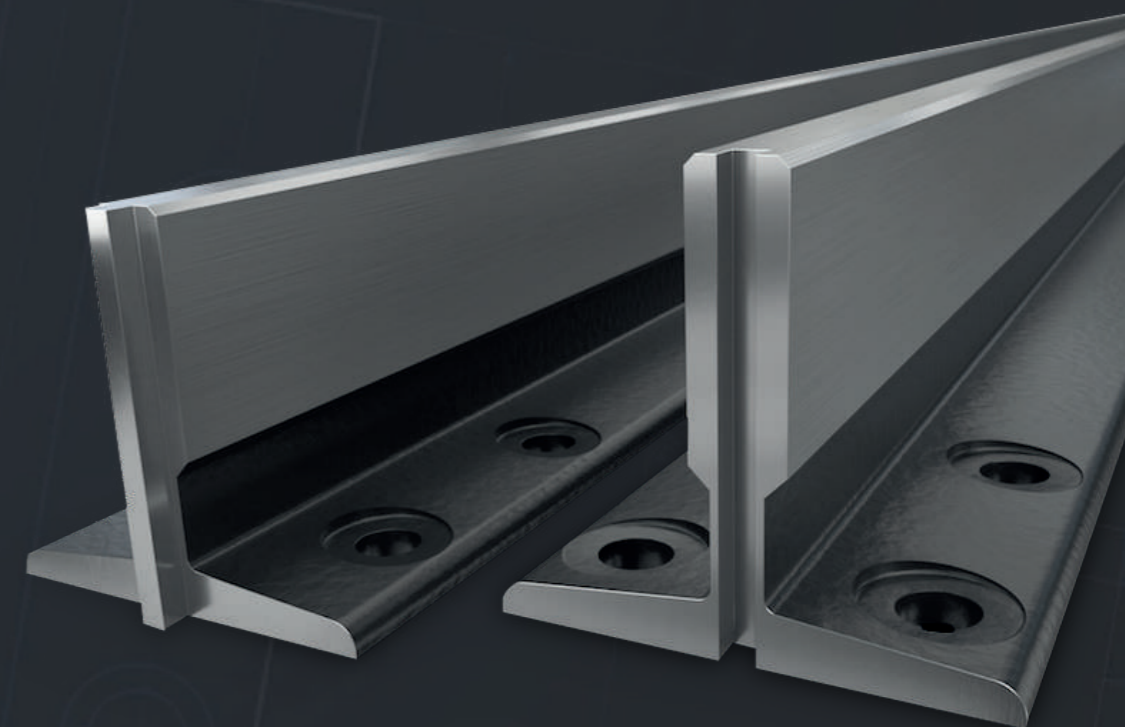
Designation	S cm ²	q ₁ kg/m	e cm	I _{x-x} cm ⁴	W _{x-x} cm ³	i _{x-x} cm	I _{y-y} cm ⁴	W _{y-y} cm ³	i _{y-y} cm
T75/BE 2007	10,91	8,56	1,86	40,29	9,29	1,92	26,47	7,06	1,56
T89/BE 2007	15,77	12,38	2,03	59,83	14,35	1,95	52,41	11,78	1,82
T90/BE	17,25	13,54	2,61	102,00	20,86	2,43	52,48	11,66	1,74
T125/BE	22,82	17,91	2,43	151,00	26,16	2,57	159,10	25,46	2,64

Dimensions and tolerances of high quality machined guide rails

Designation	b ₁	h ₁	k	n	c	f	g	r _s	m ₁	m ₂
T75/BE 2007	75,00	62,00	10,00	30,00	8,00	9,00	7,00	3,00	3,00	2,97
T89/BE 2007	89,00	62,00	16,00	34,00	10,00	11,10	7,90	3,00	6,40	6,37
T90/BE	90,00	75,00	16,00	42,00	10,00	10,00	8,00	4,00	6,40	6,37
T125/BE	125,00	82,00	16,00	42,00	10,00	12,00	8,00	4,00	6,40	6,37
Tolerance	±1,5	±0,75	+0,05	+3,0	-	±0,75	±0,75	-	+0,03	-0,03

Designation	u ₁	u ₂	d	d ₁	b ₃	l _{2g}	l _{3g}	l	h
T75/BE 2007	3,50	3,50	13,00	26,00	42,00	105,00	25,00	138,00	61,00
T89/BE 2007	7,14	6,35	13,00	26,00	57,20	114,30	38,10	156,00	61,00
T90/BE	7,14	6,35	13,00	26,00	57,20	114,30	38,10	156,00	74,00
T125/BE	7,14	6,35	17,00	33,00	79,40	114,30	38,10	156,00	81,00
Tolerance	±0,1	±0,1	-	-	±0,2	±0,2	±0,2	+3,0	+0,05

Dimensions in millimetres



ACCESSORIES

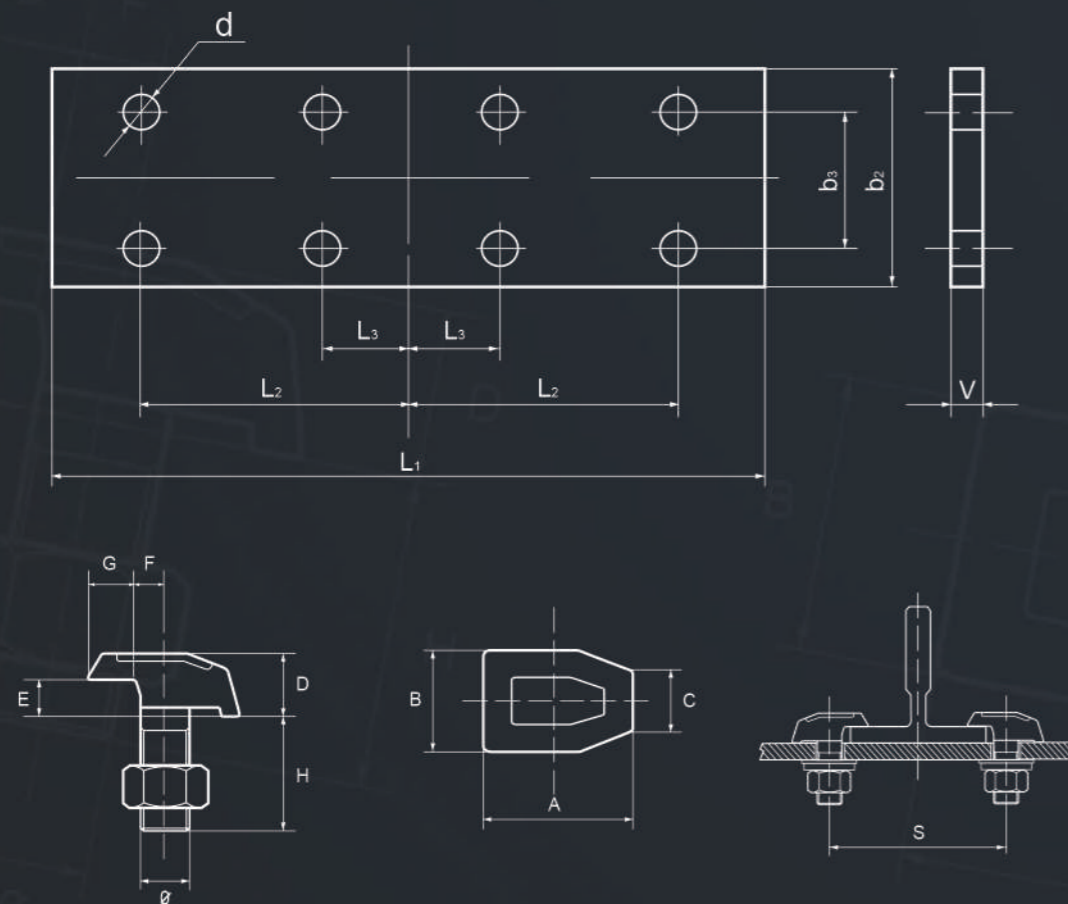
FISHPLATES, BOLTS & T-CLIPS

All elevator guide rails delivered by VOL Steel Middle East can be supplied with relevant accessories, such as fishplates, bolt sets and T-clips.

ACCESSORIES

Dimensions of the fish plates

Guide rail type	d	b ₂	b ₃	l ₁	l _{2f}	l _{3f}	v
T45/A RO45M/A	9	50	25	160	65	15	8
T50/A RO50M/A RO50.9/A	9	50	30	200	75	25	8
RO70.9/A	13	75	43	240	90	30	8,5
T70-1/A	13	70	42	250	105	25	10
T75-3/B 1997	13	75	43	240	90	30	8,5
T75/B 2007	13	70	42	250	105	25	10
T82/A	13	80	50,8	216	81	27	10
T89/A T89/B 1997 T89/B 2007	13	90	57,2	305	114,3	38,1	13
T90/A T90/B	-	-	-	-	-	-	-
T125/B T127-2/B RO127-2c14/B 1997 RO127-2c14/B 2007	17	130	79,4	305	114,3	38,1	18
T140-1/B T140-2/B	21	140	92,1	380	152,4	31,8	28
Tolerance	-	-	±0,2	±3,0	±0,2	±0,2	±3,0



CABIN AND DOOR PROFILES

As producer of special steel profiles VOL Steel Middle East delivers not only guide rails, but also other cold drawn profiles that are used in the production of elevators and doors, in particular.



QUALITY AND R&D

Thanks to the complete in-house production — from steel melting, up to the final drawing steps — VOL Steel Middle East controls the whole manufacturing process and can guarantee the highest quality on each production step. During steel melting we take multiple samples to check the chemical composition using spectroscopic analysis. On the next manufacturing steps — hot rolling cold drawing or cold rolling — we take several samples from each batch to control profile sizes, mechanical properties, micro- and macrostructure and purity level. Our highly skilled engineers conduct all these quality checks on modern equipment.

Based on our knowledge of the production process and properties of steel as material we are always interested in consulting our customers in matters of finding new steel grades, which better meets specific requirements, or modifying an existing material to achieve higher mechanical properties, improve machinability or corrosion resistance. Also, our engineers can advise how heat treatment, specific microstructure and grain size can influence properties of profile and the final product, as a result.



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