2.2 CONCRETE PIPES DN 400–2 200 ACCORDING TO ČSN EN 1916

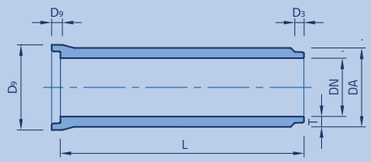
CONCRETE BELL-AND-SPIGOT AND STRAIGHT PIPES

Model	Dimensions [mm]							Fixture +/-	Weight [kg]
	DN	DA	L	T	D2	D3	D9		
TBH - Q 30/250	Reinforced-concrete variant only								
TBH - Q 30/200* PR	Reinforced-concrete variant only								
TBH - Q 40/250	400	560	2 500	80	95	90	630	-	770
TBH - Q 40/200* PR	400	560	2 000	80	95	–	–	-	650
TBH - Q 50/250	500	670	2 500	85	95	90	745	-	1 020
TBH - Q 50/200* PR	500	670	2 000	85	95	–	–	-	760
TBH - Q 60/250	600	810	2 500	105	95	90	874	-	1 460
TBH - Q 60/200* PR	600	810	2 000	105	95	–	–	-	1 075
TBH - Q 80/250	800	1 100	2 500	150	105	100	1 205	+	2 675
TBH - Q 80/200* PR	800	1 100	2 000	150	105	–	–	+	2 140
TBH - Q 80/250 RIM	800	1 044	2 500	122	105	100	1 205	+	2 320
TBH - Q 100/250	1 000	1 320	2 500	160	105	100	1 462	+	3 825
TBH - Q 100/200* PR	1 000	1 320	2 000	160	105	–	–	+	2 850
TBH - Q 100/250 RIM	1 000	1 290	2 500	145	105	100	1 462	+	3 425
TBH -Q 120/250	1 200	1 530	2 500	165	105	100	1 720	+	4 625
TBH - Q 120/200* PR	1 200	1 530	2 000	165	105	–	–	+	3 400
TBP - Q 140/250	1 400	1 820	2 500	210	135	125	–	+	6 310
TBP - Q 140/200* PR	1 400	1 820	2 000	210	135	–	–	+	4 850
TBP - Q 160/100	1 600	2 040	1 000	220	150	145	–	+	3 050
TBP - Q 160/200	1 600	2 040	2 000	220	150	145	–	+	6 100
TBP - Q 160/100 PR	1 600	2 040	1 000	220	150	–	–	+	3 050
TBP - Q 180/200	1 800	2 240	2 000	220	150	145	–	+	6 680
TBP -Q 200/200	2 000	2 500	2 000	250	150	145	–	+	8 485
TBP - Q 220/200	2 200	2 640	2 000	220	150	145	–	+	8 000

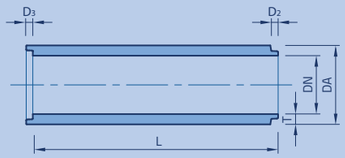
**Branch pipes in lengths of 1 100, 1 400 and 1 700 are supplied as reinforced-concrete ones only.*

PIPE PADSTONES

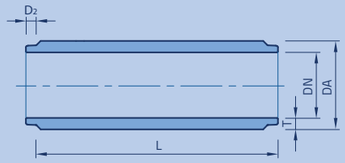
Model	Dimensions [mm]			For DN pipes	Weight [kg]
	L	H	h		
TBX - Q 30-50/15/17	600	170	150	300–500	31
TBX - Q 60-80/15/17	800	170	120	600	48
TBX - Q 80-80/15/17	800	170	120	800	48
TBX - Q 100-100/15/17	1 000	170	120	1 000	58
TBX - Q 120-100/15/17	1 000	170	120	1 200	58
TBX - Q 140-112/20/20	1 115	200	100	1 400	80



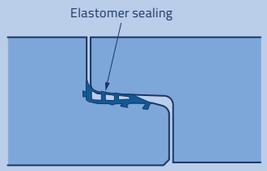
TBH bell-and-spigot pipe



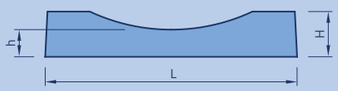
TBP bell-and-spigot pipe



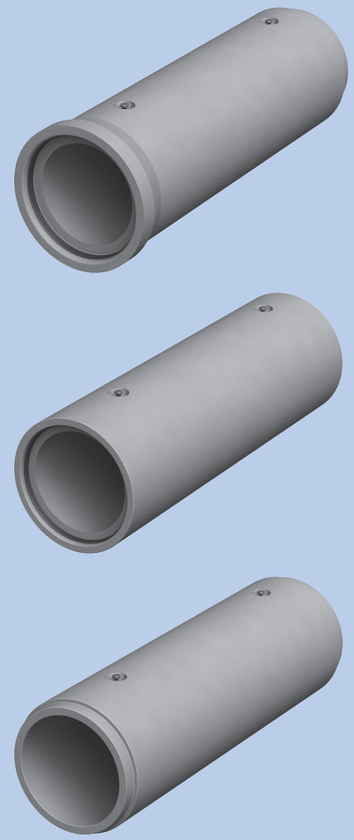
PR bell-and-spigot pipe



Joint details



Padstone



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2.3 CONCRETE PIPES WITH BASALT LINING DN 300–2 200 ACCORDING TO ČSN EN 1916

CONCRETE BELL-AND-SPIGOT AND STRAIGHT PIPES WITH LINING

Model	Dimensions [mm]				Lining position [°]	Weight [kg]
	DN	DA	L	T		
TBH - Q 30/250 CV	300	560	2 500	130	360	1 100
TBH - Q 30/200* PR CV	300	560	2 000	130	360	900
TBH - Q 40/250 CV	400	670	2 500	135	360	1 445
TBH - Q 40/200* PR CV	400	670	2 000	135	360	1 180
TBH - Q 50/250 CV	500	810	2 500	155	360	1 985
TBH - Q 50/200* PR CV	500	810	2 000	155	360	1 600
TBH - Q 60/250 CV	Reinforced-concrete variant only					
TBH - Q 60/200 PR CV	Reinforced-concrete variant only					
TBH - Q 80/250 CV	800	1 100	2 500	150	120, 180, 360	2 675
TBH - Q 80/200* PR CV	800	1 100	2 000	150	120, 180, 360	2 140
TBH - Q 100/250 CV	1 000	1 320	2 500	160	120, 180, 360	3 825
TBH - Q 100/200* PR CV	1 000	1 320	2 000	160	120, 180, 360	2 850
TBH - Q 120/250 CV	1 200	1 530	2 500	165	120, 180, 360	4 625
TBH - Q 120/200* PR CV	1 200	1 530	2 000	165	120, 180, 360	3 400
TBP - Q 140/250 CV	1 400	1 820	2 500	210	120, 180, 360	6 310
TBP - Q 140/200* PR CV	1 400	1 820	2 000	210	120, 180, 360	4 850
TBP - Q 160/100 CV	1 600	2 040	1 000	220	120, 180, 360**	3 050
TBP - Q 160/200 CV	1 600	2 040	2 000	220	120, 180, 360**	6 100
TBP - Q 160/100 PR CV	1 600	2 040	1 000	220	120, 180, 360**	3 050
TBP - Q 180/200 CV	1 800	2 240	2 000	220	120, 180, 360**	6 680
TBP -Q 200/200 CV	2 000	2 500	2 000	250	120, 180, 360**	8 485
TBP - Q 220/200 CV	2 200	2 640	2 000	220	120, 180, 360**	8 000

** Branch pipes in lengths of 1 100, 1 400 and 1 700 are supplied as reinforced-concrete ones only.*
*** For pipes with 360° lining, the internal diameter is reduced by ca. 60mmm*

PIPE PADSTONES

Model	Dimensions [mm]			For DN pipes	Weight [kg]
	L	H	h		
TBX - Q 30-50/15/17	600	170	150	300-500	31
TBX - Q 60-80/15/17	800	170	120	600	48
TBX - Q 80-80/15/17	800	170	120	800	48
TBX - Q 100-100/15/17	1 000	170	120	1 000	58
TBX - Q 120-100/15/17	1 000	170	120	1 200	58
TBX - Q 140-112/20/20	1 115	200	100	1 400	80

QUALITATIVE PROPERTIES OF LININGS

- **Parameter** basalt
- **Thickness of usable layer** 20, 23 mm
- **Bulk density** 2 950 kg/m³
- **Compressive strength** min. 300–450 MPa
- **Bending strength** min. 45 MPa
- **Tensile strength** —
- **Grinding hardness** 5 cm³/50 cm²
- **Wear resistance according to ČSN EN 102** max. 110 mm³
- **Hardness** as per Mohse st. 8
- **Absorption rate** 0 %
- **Solubility in sulphuric acid** max. 9 %

EXPLANATORY NOTES

TBH - concrete bell-and-spigot pipe
TBP - concrete straight pipe
RIM - pipe with thin wall
PR - cross pipe
CV - basalt lining
TBX - pipe padstone

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2.4 REINFORCED-CONCRETE PIPES DN 300–2 200 ACCORDING TO ČSN EN 1916

REINFORCED-CONCRETE BELL-AND-SPIGOT AND STRAIGHT PIPES

Model	Dimensions [mm]							Fixture +/-	Weight [kg]
	DN	DA	L	T	D2	D3	D9		
TZH - Q 30/250	300	440	2 500	70	85	80	528	-	575
TZH - Q 30/* PR	300	440	*	70	85	—	—	-	—
TZH - Q 40/250	400	560	2 500	80	95	90	630	-	800
TZH - Q 40/* PR	400	560	*	80	95	—	—	-	—
TZH - Q 50/250	500	670	2 500	85	95	90	745	-	1 035
TZH - Q 50/* PR	500	670	*	85	95	—	—	-	—
TZH - Q 60/250	600	810	2 500	105	95	90	874	-	1 480
TZH - Q 60/* PR	600	810	*	105	95	—	—	-	—
TZH - Q 80/250	800	1 100	2 500	150	105	100	1 205	+	2 740
TZH - Q 80/* PR	800	1 100	*	150	105	—	—	+	—
TZH - Q 80/250 RIM	800	1 044	2 500	122	105	100	1 205	+	2 350
TZH - Q 100/250	1 000	1 320	2 500	160	105	100	1 462	+	3 885
TZH - Q 100/* PR	1 000	1 320	*	160	105	—	—	+	—
TZH - Q 100/250 RIM	1 000	1 290	2 500	145	105	100	1 462	+	3 510
TZH - Q 120/250	1 200	1 530	2 500	165	105	100	1 720	+	4 740
TZH - Q 120/* PR	1 200	1 530	*	165	105	—	—	+	—
TZP - Q 140/250	1 400	1 820	2 500	210	135	125	—	+	6 325
TZP - Q 140/* PR	1 400	1 820	*	210	135	—	—	+	—
TZP - Q 160/100	1 600	2 040	1 000	220	150	145	—	+	3 100
TZP - Q 160/200	1 600	2 040	2 000	220	150	145	—	+	6 200
TZP - Q 160/100 PR	1 600	2 040	1 000	220	150	—	—	+	—
TZP - Q 180/200	1 800	2 240	2 000	220	150	145	—	+	6 850
TZP -Q 200/200	2 000	2 500	2 000	250	150	145	—	+	8 660
TZP - Q 220/200	2 200	2 640	2 000	220	150	145	—	+	8 100

** Length of 1 100, 1 400, 1 700, 2 000 mm*

PIPE PADSTONES

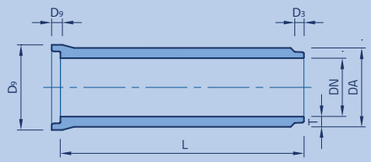
Model	Dimensions [mm]			For DN pipes	Weight [kg]
	L	H	h		
TBX - Q 30-50/15/17	600	170	150	300–500	31
TBX - Q 60-80/15/17	800	170	120	600	48
TBX - Q 80-80/15/17	800	170	120	800	48
TBX - Q 100-100/15/17	1 000	170	120	1 000	58
TBX - Q 120-100/15/17	1 000	170	120	1 200	58
TBX - Q 140-112/20/20	1 115	200	100	1 400	80

EXPLANATORY NOTES

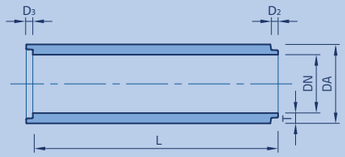
TZH - reinforced-concrete bell-and-spigot pipe, TZP - reinforced-concrete straight pipe

RIM - pipe with thin wall, PR - cross pipe

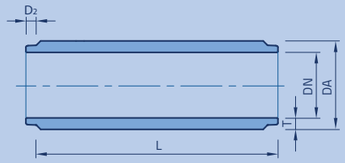
CD - reinforced-concrete pipe for SŽDC culvert, TBX - pipe padstone



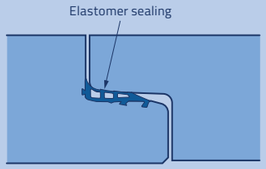
TBH bell-and-spigot pipe



TBP bell-and-spigot pipe

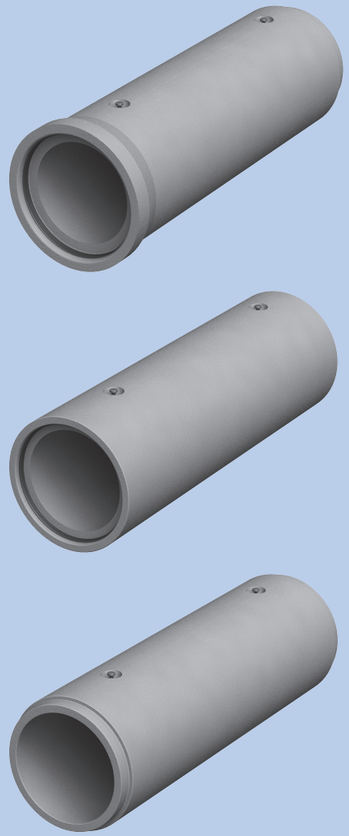


PR bell-and-spigot pipe



Joint details

Padstone



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2.5 REINFORCED-CONCRETE PIPES WITH BASALT LINING DN 300–2 200 ACCORDING TO ČSN EN 1916

REINFORCED-CONCRETE BELL-AND-SPIGOT AND STRAIGHT PIPES WITH LINING

Model	Dimensions [mm]				Lining position [°]	Weight [kg]
	DN	DA	L	T		
TZH - Q 30/250 CV	300	560	2 500	130	360	1 130
TZH - Q 30/* PR CV	300	560	*	130	360	—
TZH - Q 40/250 CV	400	670	2 500	135	360	1 475
TZH - Q 40/* PR CV	400	670	*	135	360	—
TZH - Q 50/250 CV	500	810	2 500	155	360	2 025
TZH - Q 50/* PR CV	500	810	*	155	360	—
TZH - Q 60/250 CV	600	800	2 500	100	180	1 405
TZH - Q 60/* PR CV	600	800	*	100	180	—
TZH - Q 80/250 CV	800	1 100	2 500	150	120, 180, 360	2 740
TZH - Q 80/* PR CV	800	1 100	*	150	120, 180, 360	—
TZH - Q 100/250 CV	1 000	1 320	2 500	160	120, 180, 360	3 885
TZH - Q 100/* PR CV	1 000	1 320	*	160	120, 180, 360	—
TZH - Q 120/250 CV	1 200	1 530	2 500	165	120, 180, 360	4 740
TZH - Q 120/* PR CV	1 200	1 530	*	165	120, 180, 360	—
TZP - Q 140/250 CV	1 400	1 820	2 500	210	120, 180, 360	6 325
TZP - Q 140/* PR CV	1 400	1 820	*	210	120, 180, 360	—
TZP– Q 160/100 CV	1 600	2 040	1 000	220	120, 180, 360**	3 100
TZP - Q 160/200 CV	1 600	2 040	2 000	220	120, 180, 360**	6 200
TZP - Q 160/100 PR CV	1 600	2 040	1 000	220	120, 180, 360**	—
TZP - Q 180/200 CV	1 800	2 240	2 000	220	120, 180, 360**	6 850
TZP - Q 200/200 CV	2 000	2 500	2 000	250	120, 180, 360**	8 660
TZP - Q 220/200 CV	2 200	2 640	2 000	220	120, 180, 360**	8 100

** Lengths of 1 100, 1 400, 1 700 and 2 000 mm*
*** For pipes with 360° lining, the internal diameter is reduced by ca. 60 mm*

PIPE PADSTONES

Model	Dimensions [mm]			For DN pipes	Weight [kg]
	L	H	h		
TBX - Q 30-50/15/17	600	170	150	300–500	31
TBX - Q 60-80/15/17	800	170	120	600	48
TBX - Q 80-80/15/17	800	170	120	800	48
TBX - Q 100-100/15/17	1 000	170	120	1 000	58
TBX - Q 120-100/15/17	1 000	170	120	1 200	58
TBX - Q 140-112/20/20	1 115	200	100	1 400	80

QUALITATIVE PROPERTIES OF LININGS

- **Parameter** basalt
- **Thickness of usable layer** 20, 23 mm
- **Bulk density** 2 950 kg/m³
- **Compressive strength** min. 300–450 MPa
- **Bending strength** min. 45 MPa
- **Tensile strength** —
- **Grinding hardness** 5 cm³/50 cm²
- **Wear resistance according to ČSN EN 102** max. 110 mm³
- **Hardness** as per Mohse st. 8
- **Absorption rate** 0 %
- **Solubility in sulphuric acid** max. 9 %

EXPLANATORY NOTES:

TZH - reinforced-concrete bell-and-spigot pipe,

TZP - reinforced-concrete straight pipe,

RIM - pipe with thin wall,

PR - cross pipe,

CV - basalt lining,

TBX - pipe padstone

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2.6 CONCRETE EGG-SHAPED PIPES ACCORDING TO ČSN EN 1916

CONCRETE EGG-SHAPED PIPES

Model	Dimensions [mm]										Weight [kg]
	D1	D2	D3	D	H1	H	T1	T2	T3	L	
TBO - Q 50/75/250	500	135	130	870	750	1 060	100	125	185	2 500	1 910
TBO - Q 50/75/* PR	500	135	—	—	750	1 060	100	125	185	—	—
TBO - Q 60/90/250	600	135	130	970	900	1 210	100	125	185	2 500	2 300
TBO - Q 60/90/* PR	600	135	—	—	900	1 210	100	125	185	—	—
TBO - Q 70/105/250	700	135	130	1 100	1 050	1 385	110	135	200	2 500	2 840
TBO - Q 70/105/* PR	700	135	—	—	1 050	1 385	110	135	200	—	—
TBO - Q 80/120/250	800	135	130	1 230	1 200	1 560	115	150	210	2 500	3 560
TBO - Q 80/120/* PR	800	135	—	—	1 200	1 560	115	150	210	—	—
TBO - Q 90/135/250	900	160	155	1 360	1 350	1 750	130	170	230	2 500	4 100
TBO - Q 90/135/* PR	900	160	—	—	1 350	1 750	130	170	230	—	—

** Lengths of 1 100, 1 400, 1 700, 2 000 mm*

2.7 CONCRETE EGG-SHAPED PIPES WITH BASALT LINING ACCORDING TO ČSN EN 1916

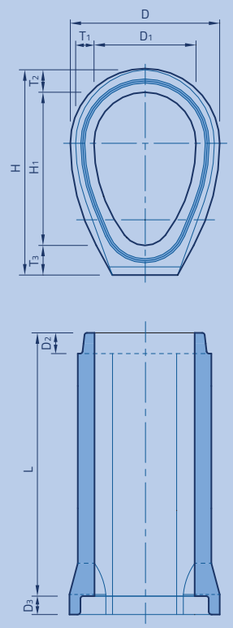
CONCRETE EGG-SHAPED PIPES WITH BASALT LINING

Model	Dimensions [mm]										Lining position [mm]	Weight [kg]
	D1	D2	D3	D	H1	H	T1	T2	T3	L		
TBO - Q 50/75/250 CV	500	135	130	870	750	1 060	100	125	185	2 500	265	1 910
TBO - Q 50/75/* PR CV	500	135	—	—	750	1 060	100	125	185	—	265	—
TBO - Q 60/90/250 CV	600	135	130	970	900	1 210	100	125	185	2 500	265	2 300
TBO - Q 60/90/* PR CV	600	135	—	—	900	1 210	100	125	185	—	265	—
TBO - Q 70/105/250 CV	700	135	130	1 100	1 050	1 385	110	135	200	2 500	350	2 840
TBO - Q 70/105/* PR CV	700	135	—	—	1 050	1 385	110	135	200	—	350	—
TBO - Q 80/120/250 CV	800	135	130	1 230	1 200	1 560	115	150	210	2 500	400	3 560
TBO - Q 80/120/* PR CV	800	135	—	—	1 200	1 560	115	150	210	—	400	—
TBO - Q 90/135/250 CV	900	160	155	1 360	1 350	1 750	130	170	230	2 500	290	4 100
TBO - Q 90/135/* PR CV	900	160	—	—	1 350	1 750	130	170	230	—	290	—
TBO - Q 90/135/250 CVB	900	160	155	1 360	1 350	1 750	130	170	230	2 500	584	4 100
TBO - Q 90/135/* PR CVB	900	160	—	—	1 350	1 750	130	170	230	—	584	—

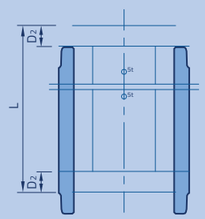
** Lengths of 1 100, 1 400, 1 700, 2 000 mm*

QUALITATIVE PROPERTIES OF LININGS

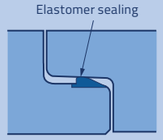
- **Parameter** basalt
- **Thickness of usable layer** 30 mm
- **Bulk density** 2 950 kg/m³
- **Compressive strength** min. 300–450 MPa
- **Bending strength** min. 45 MPa
- **Tensile strength** —
- **Grinding hardness** 5 cm³/50 cm²
- **Wear resistance according to ČSN EN 102** max. 110 mm³
- **Hardness** as per Mohse st. 8
- **Absorption rate** 0 %
- **Solubility in sulphuric acid** max. 9 %



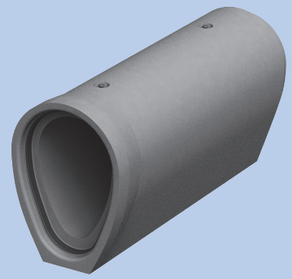
TBO (TZO) pipe

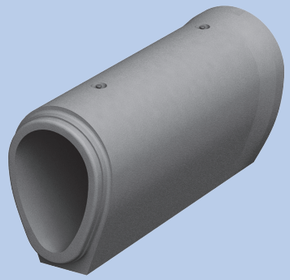


PR cross pipe



Joint details





EXPLANATORY NOTES:

TBO - concrete egg-shaped pipe,
PR - cross pipe,
CV - basalt lining

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2.8 REINFORCED-CONCRETE EGG-SHAPED PIPES ACCORDING TO ČSN EN 1916

REINFORCED-CONCRETE EGG-SHAPED PIPES

Model	Dimensions [mm]										Weight [kg]
	D1	D2	D3	D	H1	H	T1	T2	T3	L	
TZO - Q 50/75/250	500	135	130	700	750	1 060	100	125	185	2 500	1 980
TZO - Q 50/75/* PR	500	135	—	—	750	1 060	100	125	185	2 000	—
TZO - Q 60/90/250	600	135	130	800	900	1 210	100	125	185	2 500	2 325
TZO - Q 60/90/* PR	600	135	—	—	900	1 210	100	125	185	2 000	—
TZO - Q 70/105/250	700	135	130	920	1 050	1 385	110	135	200	2 500	2 920
TZO - Q 70/105/* PR	700	135	—	—	1 050	1 385	110	135	200	2 000	—
TZO - Q 80/120/250	800	135	130	1 230	1 200	1 560	115	150	210	2 500	3 630
TZO - Q 80/120/* PR	800	135	—	—	1 200	1 560	115	150	210	—	—
TZO - Q 90/135/250	900	160	155	1 360	1 350	1 750	130	170	230	2 500	4 185
TZO - Q 90/135/* PR	900	160	—	—	1 350	1 750	130	170	230	—	—

** Lengths of 1 100, 1 400, 1 700, 2 000 mm*

2.9 REINFORCED-CONCRETE EGG-SHAPED PIPES WITH BASALT LINING

ACCORDING TO ČSN EN 1916

REINFORCED-CONCRETE EGG-SHAPED PIPES WITH BASALT LINING

Model	Dimensions [mm]										Lining position [mm]	Weight [kg]
	D1	D2	D3	D	H1	H	T1	T2	T3	L		
TZO - Q 50/75/250 CV	500	135	130	870	750	1 050	100	125	185	2 500	265	1 980
TZO - Q 50/75/* PR CV	500	135	—	—	750	1 050	100	125	185	2 000	265	—
TZO - Q 60/90/250 CV	600	135	130	970	900	1 200	100	125	185	2 500	265	2 325
TZO - Q 60/90/* PR CV	600	135	—	—	900	1 200	100	125	185	2 000	265	—
TZO - Q 70/105/250 CV	700	135	130	1 100	1 050	1 385	110	135	200	2 500	350	2 920
TZO - Q 70/105/* PR CV	700	135	—	—	1 050	1 385	110	135	200	2 000	350	—
TZO - Q 80/120/250 CV	800	135	130	1 230	1 200	1 560	115	150	210	2 500	400	3 630
TZO - Q 80/120/* PR CV	800	135	—	—	1 200	1 560	115	150	210	—	400	—
TZO - Q 90/135/250 CV	900	160	155	1 360	1 350	1 750	130	170	230	2 500	290	4 185
TZO - Q 90/135/* PR CV	900	160	—	—	1 350	1 750	130	170	230	—	290	—
TZO - Q 90/135/250 CVB	900	160	155	1 360	1 350	1 750	130	170	230	2 500	584	4 185
TZO - Q 90/135/* PR CVB	900	160	—	—	1 350	1 750	130	170	230	—	584	—

** Lengths of 1 100, 1 400, 1 700, 2 000 mm*

QUALITATIVE PROPERTIES OF LININGS

- **Parameter** basalt
- **Thickness of usable layer** 30 mm
- **Bulk density** 2 950 kg/m³
- **Compressive strength** min. 300–450 MPa
- **Bending strength** min. 45 MPa
- **Tensile strength** —
- **Grinding hardness** 5 cm³/50 cm²
- **Wear resistance according to ČSN EN 102** max. 110 mm³
- **Hardness** as per Mohse st. 8
- **Absorption rate** 0 %
- **Solubility in sulphuric acid** max. 9 %

EXPLANATORY NOTES:

TZO - reinforced-concrete egg-shaped pipe, PR - cross pipe, CV - basalt lining

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2.10 REINFORCED-CONCRETE PIPES FOR PUSHING DN 800–2 200 ACCORDING TO ČSN EN 1916

REINFORCED-CONCRETE PIPES FOR PUSHING

Model	Dimensions [mm]				Weight [kg]	Maximum pushing force $F_{max.}$ [kN]	Type of sleeve
	DN	DA	L	T			
TZT - Q 80-106/199	800	1 060	1 990	130	1 810	2 008	fibreglass (LM) steel (OM) stainless (NM)
TZT - Q 100-128/199	1 000	1 280	1 990	140	2 440	2 708	
TZT - Q 120-150/199	1 200	1 500	1 990	150	3 170	3 498	
TZT - Q 140-182/250	1 400	1 820	2 500	210	6 325	6 259	No sleeve
TZT - Q 160-200/200	1 600	2 000	2 000	200	5 500	6 609	
TZT - Q 160-204/200	1 600	2 040	2 000	220	6 200	7 468	
TZT - Q 180-220/200	1 800	2 200	2 000	200	6 160	7 343	
TZT - Q 180-224/200	1 800	2 240	2 000	220	6 850	8 289	
TZT - Q 200-250/200	2 000	2 500	2 000	250	8 660		
TZT - Q 220-264/200	2 200	2 640	2 000	220	8 100	9 930	

2.11 REINFORCED-CONCRETE PIPES FOR PUSHING WITH BASALT LINING ACCORDING TO ČSN EN 1916

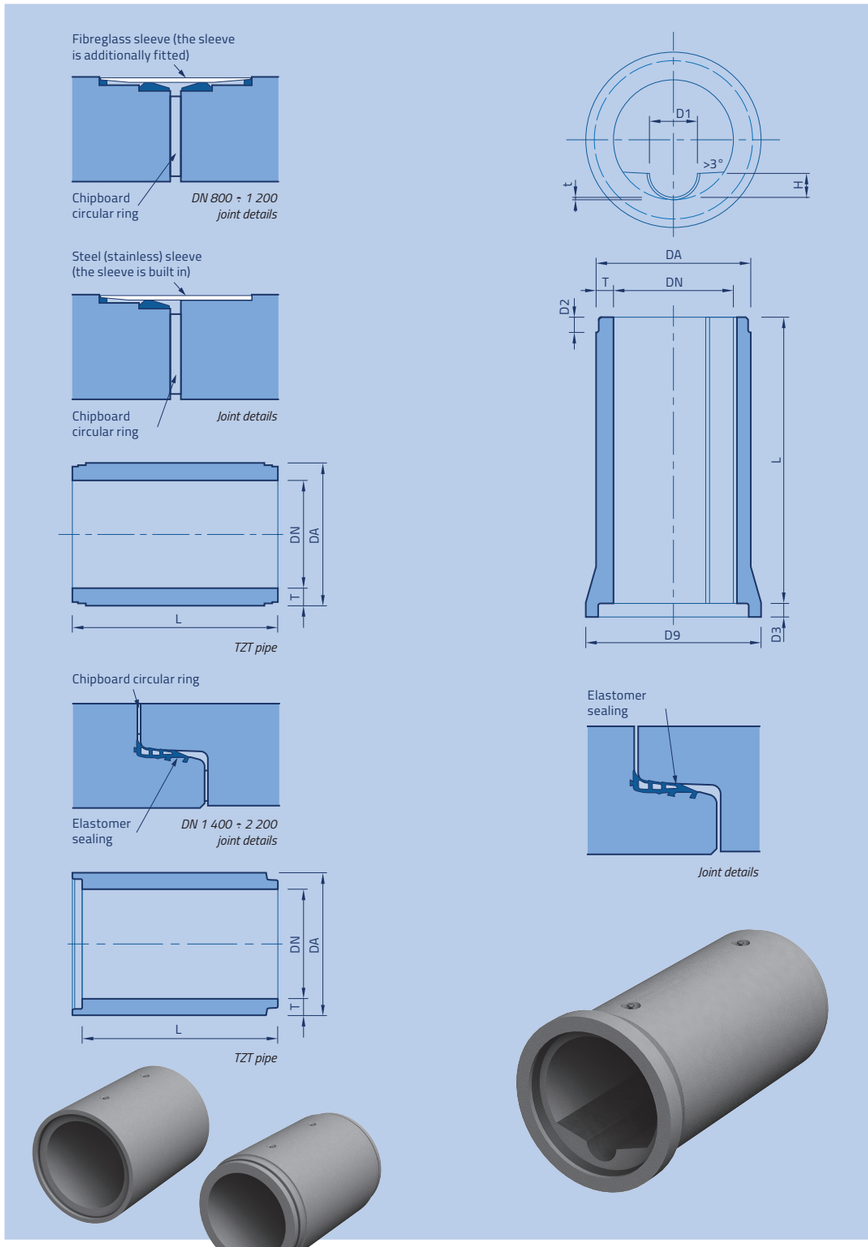
REINFORCED-CONCRETE PIPES FOR PUSHING WITH BASALT LINING

Model	Dimensions [mm]				Lining position [°]	Weight [kg]
	DN	DA	L	T		
TZT - Q 80-106/199 CV	800	1 060	1 990	130	120, 180, 360	1 810
TZT - Q 100-128/199 CV	1 000	1 280	1 990	140	120, 180, 360	2 440
TZT - Q 120-150/199 CV	1 200	1 500	1 990	150	120, 180, 360	3 170
TZT - Q 140-182/250 CV	1 400	1 820	2 500	210	120, 180, 360	6 325
TZT - Q 160-200/200 CV	1 600	2 000	2 000	200	120, 180, 360	5 500
TZT - Q 160-204/200 CV	1 600	2 040	2 000	220	120, 180, 360	6 200
TZT - Q 180-220/200 CV	1 800	2 200	2 000	200	120, 180, 360	6 160
TZT - Q 180-224/200 CV	1 800	2 240	2 000	220	120, 180, 360	6 850
TZT -Q 200-250/200 CV	2 000	2 500	2 000	250	120, 180, 360	8 660
TZT - Q 220-264/200 CV	2 200	2 640	2 000	220	120, 180, 360	8 100

QUALITATIVE PROPERTIES OF LININGS

- **Parameter** basalt
- **Thickness of usable layer** 30 mm
- **Bulk density** 2 950 kg/m³
- **Compressive strength** min. 300–450 MPa
- **Bending strength** min. 45 MPa
- **Tensile strength** —
- **Grinding hardness** 5 cm³/50 cm²
- **Wear resistance according to ČSN EN 102** max. 110 mm³
- **Hardness** dle Mohse st. 8
- **Absorption rate** 0 %
- **Solubility in sulphuric acid** max. 9 %

All pipes for pushing are fitted with fixtures.



EXPLANATORY NOTES:
TZT - reinforced-concrete trenchless pipe,
CV - basalt lining

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2.12 TROUGH-SHAPED PIPES WITH BASALT LINING ACCORDING TO ČSN EN 1916

CONCRETE TROUGH-SHAPED PIPES

Model	Dimensions [mm]										Weight [kg]
	DN	DA	L	T	D1	H	t	D2	D3	D9	
TBH-Q 100-20/250 CV - B	1 000	1 320	2 500	160	200	100	20	105	100	1 462	4 100
TBH-Q 100-30/250 CV - B	1 000	1 320	2 500	160	300	150	20	105	100	1 462	4 200
TBH-Q 100-40/250 CV - B	1 000	1 320	2 500	160	400	200	20	105	100	1 462	4 300
TBH-Q 100-20/250 CV - CV	1 000	1 290	2 500	145	200	100	20	105	100	1 462	4 200
TBH-Q 100-30/250 CV - CV	1 000	1 290	2 500	145	300	150	20	105	100	1 462	4 300
TBH-Q 100-40/250 CV - CV	1 000	1 290	2 500	145	400	200	20	105	100	1 462	4 400
TBH-Q 120-30/250 CV - B	1 200	1 580	2 500	190	300	150	20	105	100	1 720	5 910
TBH-Q 120-40/250 CV - B	1 200	1 580	2 500	190	400	200	20	105	100	1 720	6 010
TBH-Q 120-50/250 CV - B	1 200	1 580	2 500	190	500	250	23	105	100	1 720	6 110
TBH-Q 120-30/250 CV - CV	1 200	1 530	2 500	165	300	150	20	105	100	1 720	6 010
TBH-Q 120-40/250 CV - CV	1 200	1 530	2 500	165	400	200	20	105	100	1 720	6 110
TBH-Q 120-50/250 CV - CV	1 200	1 530	2 500	165	500	250	23	105	100	1 720	6 210
TBP-Q 140-40/250 CV - B	1 400	1 820	2 500	210	400	200	20	135	125	—	6 930
TBP-Q 140-50/250 CV - B	1 400	1 820	2 500	210	500	250	23	135	125	—	7 050
TBP-Q 140-60/250 CV - B	1 400	1 820	2 500	210	600	300	23	135	125	—	7 130
TBP-Q 140-40/250 CV - CV	1 400	1 820	2 500	210	400	200	20	135	125	—	7 030
TBP-Q 140-50/250 CV - CV	1 400	1 820	2 500	210	500	250	23	135	125	—	7 150
TBP-Q 140-60/250 CV - CV	1 400	1 820	2 500	210	600	300	23	135	125	—	7 230
TBP-Q 160-40/200 CV - B	1 600	2 040	2 000	220	400	200	20	150	145	—	6 680
TBP-Q 160-50/200 CV - B	1 600	2 040	2 000	220	500	250	23	150	145	—	6 810
TBP-Q 160-60/200 CV - B	1 600	2 040	2 000	220	600	300	23	150	145	—	6 910
TBP-Q 160-40/200 CV - CV	1 600	2 040	2 000	220	400	200	20	150	145	—	6 780
TBP-Q 160-50/200 CV - CV	1 600	2 040	2 000	220	500	250	23	150	145	—	6 910
TBP-Q 160-60/200 CV - CV	1 600	2 040	2 000	220	600	300	23	150	145	—	7 010

REINFORCED-CONCRETE TROUGH-SHAPED PIPES

Model	Dimensions [mm]										Weight [kg]
	DN	DA	L	T	D1	H	t	D2	D3	D9	
TZH-Q 100-20/250 CV - B	1 000	1 320	2 500	160	200	100	20	105	100	1 462	4 150
TZH-Q 100-30/250 CV - B	1 000	1 320	2 500	160	300	150	20	105	100	1 462	4 250
TZH-Q 100-40/250 CV - B	1 000	1 320	2 500	160	400	200	20	105	100	1 462	4 350
TZH-Q 100-20/250 CV - CV	1 000	1 290	2 500	145	200	100	20	105	100	1 462	4 150
TZH-Q 100-30/250 CV - CV	1 000	1 290	2 500	145	300	150	20	105	100	1 462	4 250
TZH-Q 100-40/250 CV - CV	1 000	1 290	2 500	145	400	200	20	105	100	1 462	4 350
TZH-Q 120-30/250 CV - B	1 200	1 580	2 500	190	300	150	20	105	100	1 720	5 960
TZH-Q 120-40/250 CV - B	1 200	1 580	2 500	190	400	200	20	105	100	1 720	6 060
TZH-Q 120-50/250 CV - B	1 200	1 580	2 500	190	500	250	23	105	100	1 720	6 160
TZH-Q 120-30/250 CV - CV	1 200	1 530	2 500	165	300	150	20	105	100	1 720	6 060
TZH-Q 120-40/250 CV - CV	1 200	1 530	2 500	165	400	200	20	105	100	1 720	6 160
TZH-Q 120-50/250 CV - CV	1 200	1 530	2 500	165	500	250	23	105	100	1 720	6 260
TZP-Q 140-40/250 CV - B	1 400	1 820	2 500	210	400	200	20	135	125	—	7 030
TZP-Q 140-50/250 CV - B	1 400	1 820	2 500	210	500	250	23	135	125	—	7 150
TZP-Q 140-60/250 CV - B	1 400	1 820	2 500	210	600	300	23	135	125	—	7 230
TZP-Q 140-40/250 CV - CV	1 400	1 820	2 500	210	400	200	20	135	125	—	7 130
TZP-Q 140-50/250 CV - CV	1 400	1 820	2 500	210	500	250	23	135	125	—	7 250
TZP-Q 140-60/250 CV - CV	1 400	1 820	2 500	210	600	300	23	135	125	—	7 330
TZP-Q 160-40/200 CV - B	1 600	2 040	2 000	220	400	200	20	150	145	—	6 780
TZP-Q 160-50/200 CV - B	1 600	2 040	2 000	220	500	250	23	150	145	—	6 910
TZP-Q 160-60/200 CV - B	1 600	2 040	2 000	220	600	300	23	150	145	—	7 010
TZP-Q 160-40/200 CV - CV	1 600	2 040	2 000	220	400	200	20	150	145	—	6 880
TZP-Q 160-50/200 CV - CV	1 600	2 040	2 000	220	500	250	23	150	145	—	7 010
TZP-Q 160-60/200 CV - CV	1 600	2 040	2 000	220	600	300	23	150	145	—	7 110

Note: *CV – B = basalt trough and concrete tread, CV – CV = basalt trough and basalt tread*

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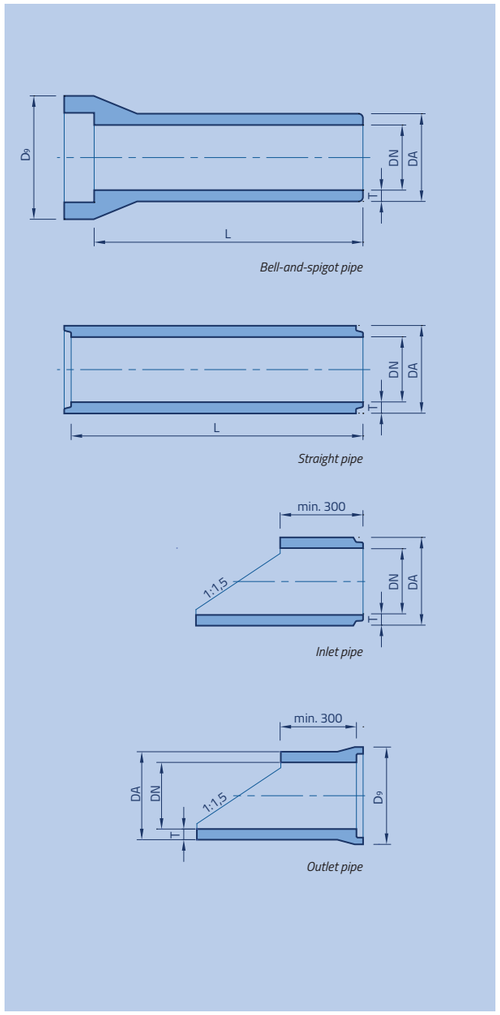
2.13 REINFORCED-CONCRETE CIRCULAR PIPES FOR CULVERT CONSTRUCTION

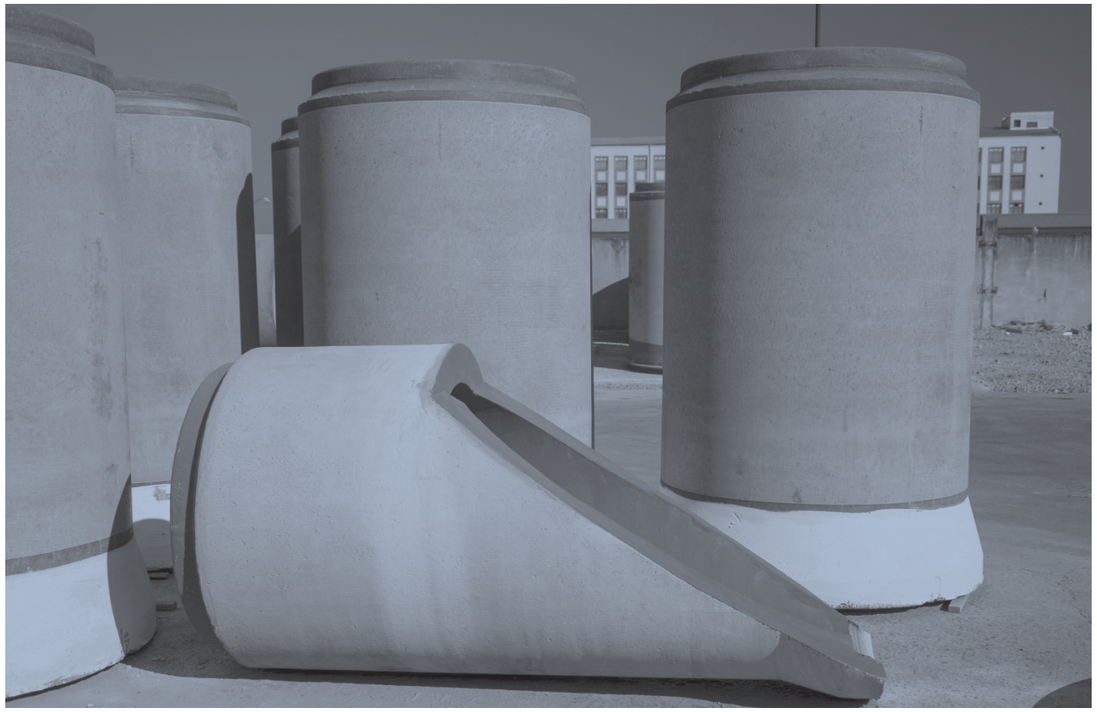
DN 600–1 800 ACCORDING TO ČSN 73 6201/2008, SŽDC S3 A S4, ČSN EN 1990, ČSN EN 1991-2, ČSN EN 1992-2, MVL 649

Reinforced-concrete pipes, including the inlet or outlet pieces, convert the railway line through obstacle, which is usually a permanent or occasional watercourse.

Model	Dimensions [mm]					Fixture +/-	Weight [kg]
	DN	DA	L	T	D9		
TZH - Q 60/250 CD	600	810	2 500	105	874	-	1 510
TZH - Q 60/... CD inlet	600	810	...	105	-	-	-
TZH - Q 60/... CD outlet	600	810	...	105	874	-	-
TZH - Q 100/250 CD	1 000	1 320	2 500	160	1 462	+	4 015
TZH - Q 100/... CD inlet	1 000	1 320	...	160	-	+	-
TZH - Q 100/... CD outlet	1 000	1 320	...	160	1 462	+	-
TZH - Q 120/250 CD	1 200	1 580	2 500	190	1 720	+	5 785
TZH - Q 120/... CD inlet	1 200	1 580	...	190	-	+	-
TZH - Q 120/... CD outlet	1 200	1 580	...	190	1 720	+	-
TZP - Q 140/250 CD	1 400	1 820	2 500	210	-	+	6 740
TZP - Q 140/... CD inlet	1 400	1 820	...	210	-	+	-
TZP - Q 140/... CD outlet	1 400	1 820	...	210	-	+	-
TZP - Q 160/200 CD	1 600	2 040	2 000	220	-	+	6 575
TZP - Q 160/100 CD	1 600	2 040	1 000	220	-	+	3 290
TZP - Q 160/... CD inlet	1 600	2 040	...	220	-	+	-
TZP - Q 160/... CD outlet	1 600	2 040	...	220	-	+	-
TZP - Q 180/200 CD	1 800	2 240	2 000	220	-	+	7 330
TZP - Q 180/... CD intlet	1 800	2 040	...	220	-	+	-
TZP - Q 180/... CD outlet	1 800	2 040	...	220	-	+	-

Note: *... – as per customer's request depending on the cut length*





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