

Technical Data Sheet

MultiPlate®



MULTIPLATE®

This technical data sheet is valid for the ViaCon Polska Sp. z o. o. production plant in Rydzyna, Poland only.

CE Certificate of Factory Production Control No. 1023-CPR-0640 F.

Steel structures and aluminium structures according to EN 1090-1. Issued by notified body no. 1023

DESCRIPTION

Flexible cold-formed corrugated steel plates, connected with bolts and nuts, used mainly in civil engineering as soil-steel composite structures for road and rail traffic loads.

INTENDED USE

- culverts
- bridges
- grade separations/viaducts
- tunnels
- underpasses
- ecological crossings
- relining of existing structures
- conveyor belt protections
- hangars

PRODUCT FEATURES

- high structural strength
- wide range of shapes and sizes
- relatively low weight
- high corrosion protection
- short installation time

TECHNICAL PROPERTIES

STEEL

The steel used for the production of the UltraCor® structures conforms to the European Standards:

- EN 10025-2 "Hot-rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels"
- EN 10149-2 "Hot-rolled flat products made of high-yield strength steels for cold forming – Part 2: Delivery conditions for thermomechanically rolled steels"

MULTIPLATE STEEL MECHANICAL PROPERTIES

Steel grade	Standard	Minimum yield strength R _e [MPa]	Tensile strength R _m [MPa]
S235JR	EN-10025	235	360-510
S355MC, S355J2	EN-10149	355	430-550
S420MC*	EN-10149	420	480-620

* - non-standard steel grade used for special design requirements only

Steel is delivered with certificate 3.1 acc. to EN 10204.

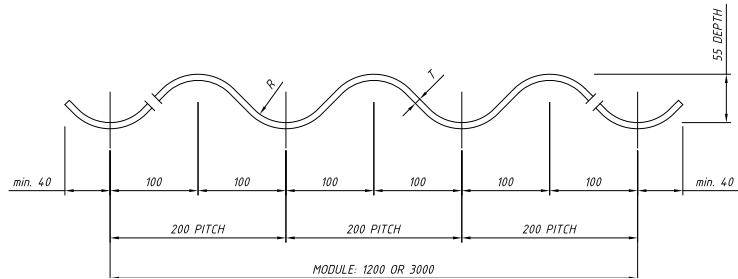
PLATE THICKNESS

MultiPlate MP200 structures are produced from steel plates of standard thicknesses: 3.0 mm, 4.0 mm, 5.0 mm, 6.0 mm, 7.0 mm, 8.0 mm.



CORRUGATION

MultiPlate MP200 corrugation profile is 200x55 mm.



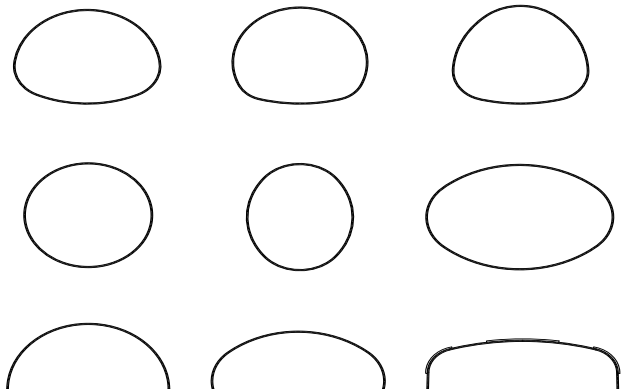
T – plate thickness [mm]
R – radius [mm] - (depends on the plate thickness).

MATERIAL PROPERTIES

Plate thickness t [mm]	Yield stress [MPa]	Area [mm ² /mm]	Moment of inertia [mm ⁴ /mm]	Section modulus [mm ³ /mm]	Plastic section modulus [mm ³ /mm]
2.50	235 / 355	2.952	1127	39.21	51.86
3.00	235 / 355	3.544	1356	46.77	62.35
3.50	235 / 355	4.136	1587	54.26	72.88
4.00	235 / 355	4.729	1819	61.67	83.45
4.50	235 / 355	5.322	2053	69.01	94.07
5.00	235 / 355	5.915	2289	76.29	104.73
5.50	235 / 355	6.509	2526	83.52	115.44
6.00	235 / 355	7.103	2766	90.68	126.20
7.00	235 / 355	8.293	3251	104.88	147.89
8.00	235 / 355	9.486	3746	118.91	169.79

PROFILE SHAPES

MultiPlate structures can be produced in the following shapes:



Basic geometrical parameters of individual profiles are presented in TDS Appendix no.1.
Custom shapes are available on request and have to be agreed with the manufacturer.



Standard width module, plate dimensions, hole sizes, hole configurations and spacing are presented in the “Catalogue of Production Standard Solutions and Details” (available on request).

LOADS:

MultiPlate structures can be used for every common class of road and rail traffic loads (according to the European Standard EN 1991-2 or others). The bearing capacity for other loads, e.g., airplanes, industrial or any other special loads can also be evaluated.



PLATES

MultiPlate MP200 structures can be produced in two variants of sheet width: 1200 mm and 3000 mm.

The manufacturer decides which variant of a given structure will be produced. This choice takes into account the availability of the raw material in stock and/or the current occupancy of the production lines. It is also possible to choose the width of the plates at the order stage, which must be stated in the order form.

Maximum plate length is limited by plate width, thickness and steel grade:

NUMBER OF M-MODULES – FOR 1200 MM PLATE WIDTH

t [mm]	S235JR	S355MC	S355J2	S420MC
2.50	4 - 10	4 - 10	4 - 10	4 - 10
3.00	4 - 10	4 - 10	4 - 10	4 - 10
3.50	4 - 10	4 - 10	4 - 10	4 - 10
4.00	4 - 10	4 - 10	4 - 10	4 - 10
4.50	4 - 10	4 - 10	4 - 10	4 - 10
5.00	4 - 10	4 - 10	4 - 10	4 - 10
5.50	4 - 10	4 - 10	4 - 10	4 - 10
6.00	4 - 10	4 - 10	4 - 10	4 - 10
7.00	4 - 10	4 - 10	4 - 10	4 - 10
8.00	4 - 10	4 - 8	4 - 8	4 - 8

NUMBER OF M-MODULES – FOR 3000 MM PLATE WIDTH

t [mm]	S355MC	S355J2
3.00	4 - 8*	4 - 8*
4.00	4 - 8*	4 - 8*
5.00	4 - 8*	4 - 8*
6.00	4 - 8*	4 - 8*
7.00	4 - 8*	4 - 8*
8.00	4 - 8*	4 - 8*

* standard lengths are 4M, 7M, 8M, 5M and 6M plates are cut from longer plates

The minimum radius dictates the plate thickness and steel grade:

MINIMUM RADIUS [MM] – FOR 1200 MM PLATE WIDTH

t [mm]	S235JR	S355MC	S355J2	S420MC
2.50	900	900	900	900
3.00	600	600	600	600
3.50	600	600	600	600
4.00	600	600	600	600
4.50	600	600	600	600
5.00	600	600	600	600
5.50	600	600	600	600
6.00	600	600	600	600
7.00	600	600	600	600
8.00	600	600	600	900

MINIMUM RADIUS [MM] – FOR 3000 MM PLATE WIDTH

t [mm]	S355MC	S355J2
3.00	600	600
4.00	600	600
5.00	600	600
6.00	600	600
7.00	600	600
8.00	600	600

PLATE DIMENSIONS AND HOLE CONFIGURATIONS

Standard plate dimensions and standard hole sizes and configurations are presented in "Catalogue of Production Standard. Solutions and Details" – drawing MP.2.

BOLTS, NUTS, ANCHOR BOLTS

Type	Dimension	Length	Standard
Bolts	M20 (class 8.8)	50 mm, 70 mm	EN ISO 898-1
	M20 (class 10.9)	50 mm, 70 mm	EN ISO 898-1
Nuts	M20	N/A	EN ISO 898-2
Anchor bolts	M20	225 mm, 365 mm	EN 10025-2

STANDARD LENGTH AND QUANTITY OF BOLTS:

Plates thickness and quantity	Bolts length and quantity	
t [mm]	100%	
2.50	50 mm	
3.00	50 mm	
3.50	50 mm	
4.00	50 mm	
4.50	50 mm	
5.00	50 mm	
5.50	50 mm	
6.00	50 mm	
t [mm]	10%	90%
7.00	70 mm	50 mm
8.00	70 mm	50 mm

Bolts and nuts are galvanised in accordance with EN ISO 1461 and EN ISO 10684.

Bolts and nuts are delivered with certificate 3.1 according to EN 10204.

TOLERANCES

Geometric parameters of the structure after assembly should not differ from the designed values by more than:

- span $\pm 2\%$
- rise $\pm 2\%$
- length $+ 0.5\%$

The vertical displacement of the structure's crown point during the backfilling process should not exceed 2% of its span measured before backfilling.

OTHER INFORMATION

Each application of a MultiPlate MP200 structure requires technical design, including estimated loads, hydrological conditions and other limiting factors. Appropriate rise and span of the cross section should be chosen. The lifetime analysis should specify the anti-corrosion system to be applied. The design should follow the guidelines issued by ViaCon as well as respective country-specific requirements. Foundations for corrugated steel structures with open shapes should be designed on an individual basis. The system includes flexible foundations. Dewatering systems should be designed on an individual basis.

LIST OF STANDARDS:

EN ISO 898-1 – “Mechanical properties of fasteners made of carbon steel and alloy steel. Bolts, screws and studs with specified property classes. Coarse thread and fine pitch thread”.

EN ISO 1090-1 – “Execution of steel structures and aluminum structures. Requirements for conformity assessment of structural components”.

EN ISO 1461 – “Hot-dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods”.

EN ISO 1991-2 – “Eurocode 1. Actions on structures – Part2: Traffic loads on bridges”.

EN ISO 2178 – “Non-magnetic coatings on magnetic substrates. Measurement of coating thickness. Magnetic method”.

EN 10025-2 – “Hot-rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels”.

EN 10149-2 – “Designation hot-rolled flat products made of high yield strength steels for cold forming – Delivery conditions for thermo-mechanically rolled steels”.

EN 10204 – “Metallic products. Types of inspection documents”.

EN ISO 10684 – “Fasteners. Hot-dip galvanised coatings”.

DURABILITY:

Durability of MultiPlate MP200 structures is ensured by:

- **zinc coating**
- **paint coating – ViaCoat**
- **sacrificial thickness of the steel plate (increase of the plate thickness)**
- **HDPE coating – ViaCover (for the structure bottom part)**

Depending on environmental conditions (aggressivity), calculated durability may be longer than 100 years.

ZINC COATING

Structural plates are galvanised in accordance with EN ISO 1461. Table No.1 presents a feasible range of zinc coat thicknesses. The zinc coat thickness is verified by means of magnetic method in accordance with EN ISO 2178. Each structure is delivered with a certificate of galvanising.

Bolts and nuts are galvanised in accordance with EN ISO 1461.

VIACOAT

The extension of durability of MultiPlate structures (mainly necessary in aggressive environments) is achieved with the application of additional corrosion protection – epoxy (EP), polyurethane (PUR), or other painting systems. The protection of structure provided by zinc coating and paint system is called ViaCoat. Total durability of the corrosion protection system is higher than summarised durability of individual zinc and paint layers. The synergy factor is between 1.5(200µm) and 2.5(400µm) and depends on the thickness (given in the brackets) of paint coating. The minimum adhesion of the paint to the zinc base measured by the pull-off method is 4 MPa. In order to obtain proper protection effect, paint coatings are applied in controlled conditions (closed area with defined temperature and humidity), keeping the technological regime. The colour of the ViaCon standard painting system is RAL 1013 or RAL 7035. Each painted structure is always delivered with a certificate of painting.

VIACOVER

Additional protection is recommended in cases where structures are exposed to high-speed flowing water carrying rock, gravel or sand material that causes abrasion. ViaCover is a 2 mm thick HDPE sheet thermally formed to fit the corrugation of the plate. HDPE coating ensures abrasion resistance, significantly increases the durability of a culvert and provides resistance to multiple types of corrosive environments and UV (due to the content of carbon black). It has high mechanical resistance to stretching, tearing and puncturing.

EXTRA THICKNESSES OF ZINC COATING

Plate thickness [mm]	Thickness of zinc coating acc. to EN ISO 1461 [μm]	Extra thickness of zinc coating available on customer's demand as a standard [μm]															Extra thickness of zinc coating available on customer's demand by special conditions [μm]														
		55	70	85	60	65	70	75	80	85	90	95	100	105	110	115	90	95	100	105	110	115	120	125	130	135	140	145	150		
3.00	X	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4.00	-	X	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-		
5.00	-	X	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-		
6.00	-	X	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7.00	-	-	X	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	X	X	X	X	X	X	-		
8.00	-	-	X	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-	-	X	X	X	X	X	X	-		
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
X	- available thickness of zinc coating																														

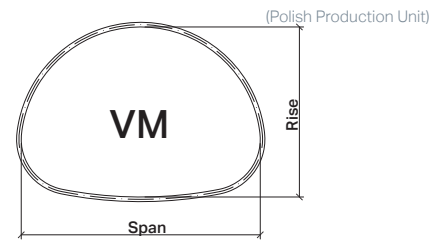
TRANSPORT AND STORAGE:

Unloading and placement of the structure's elements should be performed with the use of light mechanical crane devices and textile belts. The structure's elements should not be dropped from the transportation unit. Plates can be stored in stacks using wooden or carton spacers.

Any damages to the corrosion protection caused during transportation, unloading or assembly must be repaired in accordance with the "Assembly and Backfilling Guide".



APENDIX

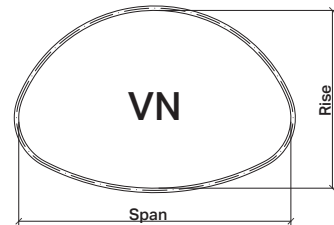


VIACON MULTIPLATE STRUCTURE - VM.... STANDARD PROFILES

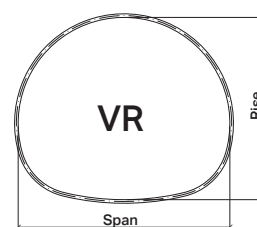
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VM1	1.80	1.50	2.12
VM2	1.89	1.55	2.31
VM3	2.23	1.68	2.91
VM4	2.49	1.83	3.57
VM5	2.84	2.02	4.54
VM6	3.23	2.15	5.33
VM7	3.38	2.25	5.91
VM8	3.65	2.39	6.81
VM9	3.72	2.44	7.13
VM10	4.05	2.52	7.75
VM11	4.13	2.57	8.09
VM12	4.34	2.72	9.14
VM13	4.41	3.62	12.62
VM14	4.49	3.67	13.07
VM15	4.84	3.82	14.46
VM16	4.92	3.87	14.94
VM17	5.14	4.04	16.43
VM18	5.21	4.09	16.95
VM19	5.43	4.13	17.44
VM20	5.58	4.24	18.50
VM21	5.79	4.40	20.16
VM22	6.06	4.56	21.86
VM23	6.25	4.67	23.04
VM24	6.44	4.70	23.61
VM25	6.71	4.93	26.10
VM26	6.78	4.98	26.73
VM27	6.97	5.09	28.02
VM28	7.11	5.07	27.99
VM29	7.24	5.18	29.33
VM30	7.43	5.35	31.38
VM31	7.63	5.45	32.78
VM32	7.89	5.61	34.92
VM33	8.09	5.71	36.39
VM34	8.35	5.87	38.64
VM35	8.55	5.98	40.19
VM36	8.81	6.13	42.55
VM37	9.01	6.24	44.17
VM38	9.27	6.40	46.64
VM39	9.48	6.50	48.33
VM40	9.73	6.66	50.92
VM41	9.96	7.32	57.16
VM42	10.22	7.49	60.02
VM43	10.42	7.60	61.97
VM44	10.67	7.76	64.95
VM45	10.87	7.87	66.98

VIACON MULTIPLATE STRUCTURE - VM.... STANDARD PROFILES

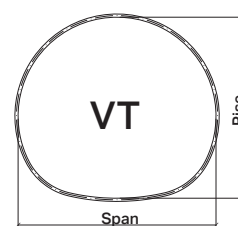
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VM46	11.13	8.04	70.06
VM47	11.33	8.15	72.17
VM48	11.58	8.31	75.37
VM49	11.78	8.42	77.55
VM50	12.03	8.59	80.87

**VIACON MULTIPLATE STRUCTURE - VN.... STANDARD PROFILES**

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VN1	2.14	1.64	2.70
VN2	2.24	1.68	2.91
VN3	2.35	1.73	3.12
VN4	2.97	2.00	4.53
VN5	3.35	2.19	5.61
VN6	3.67	2.61	7.44
VN7	3.76	2.65	7.78
VN8	3.97	2.73	8.45
VN9	4.14	2.82	9.15
VN10	4.60	2.98	10.62
VN11	5.24	3.23	13.02
VN12	5.41	3.32	13.87
VN13	5.62	3.40	14.73
VN14	5.84	3.48	15.63
VN15	5.99	3.57	16.56
VN16	6.18	3.60	17.01
VN17	6.34	3.69	17.98
VN18	6.55	3.77	18.96
VN19	6.63	3.82	19.47
VN20	6.90	3.89	20.46
VN21	7.18	4.19	23.09
VN22	7.39	4.27	24.20
VN23	7.60	4.35	25.34
VN24	7.89	4.48	27.08
VN25	8.11	4.56	28.28
VN26	8.32	4.65	29.51
VN27	8.54	4.73	30.75
VN28	8.83	4.86	32.66
VN29	9.04	4.94	33.96
VN30	9.25	5.02	35.30
VN31	9.47	5.10	36.66
VN32	9.68	5.19	38.03
VN33	9.97	5.31	40.15
VN34	10.18	5.40	41.58
VN35	10.40	5.48	43.06

**VIACON MULTIPLATE STRUCTURE - VR.... STANDARD PROFILES**

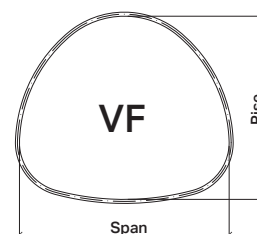
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VR1	2.84	2.50	5.68
VR2	3.17	2.73	6.96
VR3	3.24	2.79	7.30
VR4	3.64	3.01	8.74
VR5	3.78	3.13	9.51
VR6	4.03	3.30	10.72
VR7	4.17	3.43	11.58
VR8	4.58	3.64	13.35
VR9	4.78	3.83	14.79
VR10	4.91	3.95	15.78
VR11	5.27	4.10	17.3
VR12	5.52	4.27	18.91
VR13	5.77	4.45	20.59
VR14	5.96	4.64	22.37
VR15	6.17	5.16	25.56
VR16	6.39	5.34	27.54
VR17	6.64	5.52	29.58
VR18	6.89	5.69	31.69
VR19	7.17	5.94	34.64
VR20	7.32	5.98	35.37
VR21	7.57	6.15	37.67
VR22	7.85	6.40	40.87
VR23	8.07	6.50	42.48
VR24	8.26	6.61	44.13
VR25	8.51	6.79	46.69

**VIACON MULTIPLATE STRUCTURE - VT.... STANDARD PROFILES**

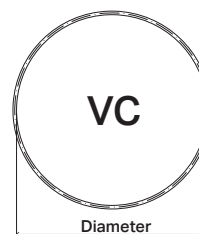
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VT1	2.83	2.68	6.05
VT2	3.25	2.98	7.76
VT3	3.32	3.05	8.13
VT4	3.40	3.11	8.51
VT5	3.56	3.23	9.27
VT6	3.71	3.36	10.09
VT7	3.86	3.49	10.93
VT8	4.22	3.72	12.70
VT9	4.29	3.79	13.16
VT10	4.44	3.92	14.13
VT11	4.53	3.97	14.61
VT12	4.75	4.17	16.13

VIACON MULTIPLATE STRUCTURE - VT.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VT13	5.04	4.75	19.17
VT14	5.19	4.88	30.22
VT15	5.45	5.06	22.13
VT16	5.68	5.25	24.01
VT17	5.92	5.43	25.96
VT18	6.22	5.69	28.69
VT19	6.42	5.80	30.07
VT20	6.50	5.86	30.80
VT21	6.72	6.06	33.00
VT22	7.02	6.32	36.04
VT23	7.15	6.36	36.81
VT24	7.40	6.54	39.19
VT25	7.52	6.68	40.84
VT26	7.64	6.72	41.65
VT27	7.76	6.87	43.37
VT28	8.07	7.12	46.83
VT29	8.27	7.23	48.59
VT30	8.44	7.35	50.41
VT31	8.56	7.49	52.29
VT32	8.66	7.54	53.20
VT33	8.87	7.74	56.08
VT34	9.00	7.95	58.30
VT35	9.24	8.14	61.28

**VIACON MULTIPLATE STRUCTURE - VF.... STANDARD PROFILES**

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VF1	1.96	1.92	2.97
VF2	2.62	2.26	4.71
VF3	2.85	2.49	5.56
VF4	3.39	3.18	8.49
VF5	3.54	3.07	8.56
VF6	3.77	3.24	9.72
VF7	4.32	3.81	13.08
VF8	4.55	4.04	14.48



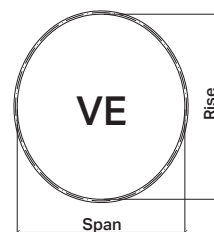
VIACON MULTIPLATE STRUCTURE - VC STANDARD PROFILES

Name	Diameter - inner [m]	Area [m²]
VC1	1.52	1.79
VC2	1.59	1.97
VC3	1.67	2.16
VC4	1.74	2.36
VC5	1.82	2.57
VC6	1.89	2.79
VC7	1.97	3.01
VC8	2.04	3.25
VC9	2.12	3.49
VC10	2.19	3.75
VC11	2.27	4.00
VC12	2.34	4.27
VC13	2.42	4.55
VC14	2.49	4.84
VC15	2.57	5.14
VC16	2.64	5.44
VC17	2.72	5.75
VC18	2.79	6.08
VC19	2.87	6.41
VC20	2.94	6.75
VC21	3.02	7.10
VC22	3.09	7.45
VC23	3.17	7.82
VC24	3.24	8.19
VC25	3.32	8.59
VC26	3.39	8.97
VC27	3.46	9.37
VC28	3.54	9.79
VC29	3.61	10.20
VC30	3.69	10.64
VC31	3.76	11.07
VC32	3.84	11.51
VC33	3.90	11.97
VC34	3.99	12.43
VC35	4.06	12.91
VC36	4.14	13.38
VC37	4.21	13.87
VC38	4.29	14.37
VC39	4.36	14.88
VC40	4.44	15.40
VC41	4.51	15.92
VC42	4.59	16.45
VC43	4.66	17.00
VC44	4.74	17.54
VC45	4.81	18.11
VC46	4.89	18.67

VIACON MULTIPLATE STRUCTURE - VC STANDARD PROFILES

Name	Diameter - inner [m]	Area [m²]
VC47	4.96	19.24
VC48	5.04	19.84
VC49	5.11	20.43
VC50	5.19	21.04
VC51	5.26	21.65
VC52	5.33	22.26
VC53	5.41	22.90
VC54	5.48	23.53
VC55	5.56	24.19
VC56	5.63	24.84
VC57	5.71	25.50
VC58	5.78	26.18
VC59	5.86	26.86
VC60	5.93	27.56
VC61	6.01	28.26
VC62	6.08	28.96
VC63	6.16	29.69
VC64	6.23	30.41
VC65	6.31	31.15
VC66	6.38	31.89
VC67	6.46	32.63
VC68	6.53	33.41
VC69	6.61	34.17
VC70	6.68	34.96
VC71	6.76	35.74
VC72	6.83	36.53
VC73	6.91	37.35
VC74	6.98	38.16
VC75	7.06	38.99
VC76	7.13	39.82
VC77	7.20	40.65
VC78	7.28	41.51
VC79	7.35	42.36
VC80	7.43	43.24

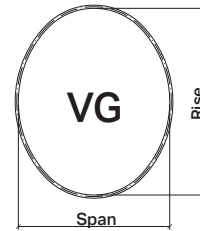




VIACON MULTIPLATE STRUCTURE - VE.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VE1	1.52	1.68	1.96
VE2	1.66	1.83	2.35
VE3	1.93	2.15	3.23
VE4	2.08	2.31	3.73
VE5	2.21	2.46	4.25
VE6	2.51	2.78	5.42
VE7	2.65	2.93	6.05
VE8	2.80	3.09	6.72
VE9	3.09	3.41	8.17
VE10	3.23	3.56	8.94
VE11	3.34	3.72	9.74
VE12	3.53	3.88	10.60
VE13	3.65	4.03	11.47
VE14	3.78	4.19	12.38
VE15	3.96	4.35	13.34
VE16	4.08	4.50	14.32
VE17	4.19	4.66	15.33
VE18	4.36	4.82	16.39
VE19	4.51	4.98	17.48
VE20	4.63	5.13	18.60
VE21	4.78	5.29	19.76
VE22	4.93	5.45	20.95
VE23	5.04	5.61	22.17
VE24	5.19	5.76	23.44
VE25	5.33	5.92	24.74
VE26	5.47	6.08	26.07
VE27	5.61	6.24	27.44
VE28	5.76	6.39	28.85
VE29	5.90	6.55	30.28
VE30	6.05	6.71	31.76
VE31	6.17	6.86	33.26
VE32	6.33	7.02	34.81
VE33	6.46	7.18	36.38
VE34	6.61	7.34	38.01
VE35	6.75	7.49	39.65

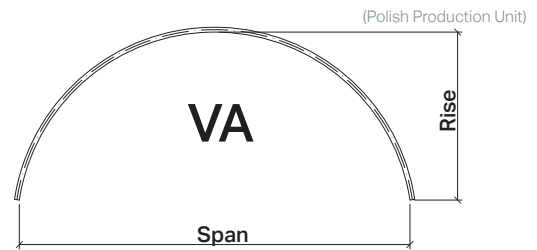




VIACON MULTIPLATE STRUCTURE - VG.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VG1	1.43	1.68	1.96
VG2	1.57	1.83	2.35
VG3	1.80	2.15	3.23
VG4	1.94	2.31	3.73
VG5	2.07	2.46	4.25
VG6	2.37	2.78	5.42
VG7	2.49	2.93	6.05
VG8	2.63	3.09	6.72
VG9	2.93	3.41	8.17
VG10	3.06	3.56	8.94
VG11	3.12	3.72	9.74
VG12	3.35	3.88	10.60
VG13	3.43	4.03	11.47
VG14	3.55	4.19	12.38
VG15	3.76	4.35	13.34
VG16	3.85	4.50	14.32
VG17	3.92	4.66	15.33
VG18	4.12	4.82	16.39
VG19	4.26	4.98	17.48
VG20	4.35	5.13	18.60
VG21	4.49	5.29	19.76
VG22	4.64	5.45	20.95
VG23	4.71	5.61	22.17
VG24	4.86	5.76	23.44
VG25	4.98	5.92	24.74
VG26	5.12	6.08	26.07
VG27	5.24	6.24	27.44
VG28	5.40	6.39	28.85
VG29	5.53	6.55	30.28
VG30	5.67	6.71	31.76
VG31	5.77	6.86	33.26
VG32	5.91	7.02	34.81
VG33	6.03	7.18	36.38
VG34	6.20	7.34	38.01
VG35	6.32	7.49	39.65





VIACON MULTIPLATE STRUCTURE - VA.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VA1	1.70	0.82	1.10
VA2	1.95	0.86	1.30
VA3	2.45	1.07	2.01
VA4	2.95	1.28	2.88
VA5	2.95	1.40	3.23
VA6	3.20	1.32	3.18
VA7	3.20	1.45	3.56
VA8	3.45	1.36	3.49
VA9	3.45	1.61	4.31
VA10	3.70	1.53	4.25
VA11	3.70	1.65	4.69
VA12	3.70	1.78	5.13
VA13	3.95	1.56	4.61
VA14	3.95	1.82	5.55
VA15	3.95	1.94	6.02
VA16	4.20	1.73	5.48
VA17	4.20	1.86	5.99
VA18	4.20	1.99	6.43
VA19	4.45	1.77	5.88
VA20	4.45	1.90	6.42
VA21	4.45	2.03	6.95
VA22	4.45	2.15	7.48
VA23	4.70	1.81	6.30
VA24	4.70	1.94	6.87
VA25	4.70	2.07	7.43
VA26	4.70	2.20	7.99
VA27	4.70	2.32	8.54
VA28	4.95	1.98	7.32
VA29	4.95	2.11	7.91
VA30	4.95	2.24	8.50
VA31	4.95	2.36	9.09
VA32	4.95	2.48	9.68
VA33	5.20	2.02	7.78
VA34	5.20	2.15	8.41
VA35	5.20	2.28	9.03
VA36	5.20	2.40	9.65
VA37	5.20	2.53	10.26
VA38	5.45	2.19	8.91
VA39	5.45	2.32	9.56
VA40	5.45	2.45	10.22
VA41	5.45	2.57	10.86
VA42	5.45	2.69	11.50
VA43	5.70	2.22	9.42
VA44	5.70	2.36	10.10
VA45	5.70	2.49	10.79
VA46	5.70	2.61	11.47

VIACON MULTIPLATE STRUCTURE - VA.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VA47	5.70	2.73	12.14
VA48	5.95	2.40	10.66
VA49	5.95	2.53	11.37
VA50	5.95	2.65	12.08
VA51	5.95	2.78	12.78
VA52	5.95	2.90	13.48
VA53	6.20	2.43	11.21
VA54	6.20	2.57	11.96
VA55	6.20	2.69	12.70
VA56	6.20	2.82	13.44
VA57	6.20	2.94	14.17
VA58	6.20	3.06	14.90
VA59	6.45	2.47	11.77
VA60	6.45	2.60	12.56
VA61	6.45	2.73	13.33
VA62	6.45	2.86	14.10
VA63	6.45	2.99	14.87
VA64	6.45	3.11	15.63
VA65	6.70	2.64	13.16
VA66	6.70	2.77	13.97
VA67	6.70	2.90	14.77
VA68	6.70	3.03	15.57
VA69	6.70	3.15	16.35
VA70	6.70	3.27	17.15
VA71	6.95	2.67	13.76
VA72	6.95	2.81	14.61
VA73	6.95	2.94	15.44
VA74	6.95	3.07	16.27
VA75	6.95	3.19	17.10
VA76	6.95	3.32	17.92
VA77	6.95	3.44	18.74
VA78	7.20	2.85	15.27
VA79	7.20	2.98	16.13
VA80	7.20	3.11	16.99
VA81	7.20	3.24	17.85
VA82	7.20	3.36	18.71
VA83	7.20	3.48	19.55
VA84	7.45	2.88	15.93
VA85	7.45	3.02	16.82
VA86	7.45	3.16	17.72
VA87	7.45	3.28	18.61
VA88	7.45	3.40	19.49
VA89	7.45	3.53	20.37
VA90	7.45	3.64	21.25
VA91	7.70	3.05	17.53
VA92	7.70	3.19	18.46
VA93	7.70	3.32	19.37

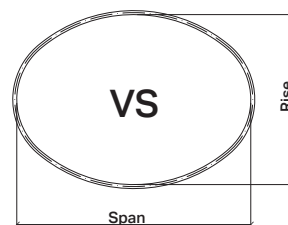
VIACON MULTIPLATE STRUCTURE - VA.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VA94	7.70	3.46	20.29
VA95	7.70	3.57	21.20
VA96	7.70	3.69	22.11
VA97	7.70	3.81	23.02
VA98	7.95	3.09	18.23
VA99	7.95	3.22	19.19
VA100	7.95	3.36	20.15
VA101	7.95	3.49	21.10
VA102	7.95	3.61	22.04
VA103	7.95	3.73	22.98
VA104	7.95	3.85	23.91
VA105	8.20	3.26	19.94
VA106	8.20	3.40	20.93
VA107	8.20	3.53	21.91
VA108	8.20	3.66	22.89
VA109	8.20	3.78	23.86
VA110	8.20	3.90	24.82
VA111	8.20	4.02	25.78
VA112	8.45	3.30	20.69
VA113	8.45	3.43	21.72
VA114	8.45	3.56	22.73
VA115	8.45	3.69	23.74
VA116	8.45	3.82	24.74
VA117	8.45	3.94	25.74
VA118	8.45	4.06	26.74
VA119	8.45	4.18	27.74
VA120	8.70	3.33	21.45
VA121	8.70	3.47	22.52
VA122	8.70	3.60	23.50
VA123	8.70	3.67	24.60
VA124	8.70	3.86	25.64
VA125	8.70	3.99	26.67
VA126	8.70	4.11	27.69
VA127	8.70	4.23	28.72
VA128	8.95	3.51	23.32
VA129	8.95	3.64	24.40
VA130	8.95	3.77	25.47
VA131	8.95	3.90	26.55
VA132	8.95	4.03	27.61
VA133	8.95	4.16	28.66
VA134	8.95	4.27	29.72
VA135	8.95	4.39	30.77
VA136	9.20	3.54	24.13
VA137	9.20	3.68	25.25
VA138	9.20	3.81	26.35
VA139	9.20	3.94	27.45
VA140	9.20	4.07	28.54

VIACON MULTIPLATE STRUCTURE - VA.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VA141	9.20	4.19	29.63
VA142	9.20	4.32	30.73
VA143	9.20	4.44	31.80
VA144	9.20	4.56	32.89
VA145	9.45	3.71	26.09
VA146	9.45	3.85	27.23
VA147	9.45	3.98	28.37
VA148	9.45	4.11	29.50
VA149	9.45	4.23	30.62
VA150	9.45	4.36	31.73
VA151	9.45	4.48	32.86
VA152	9.45	4.60	33.96
VA153	9.45	4.72	35.08
VA154	9.70	3.75	26.95
VA155	9.70	3.88	28.13
VA156	9.70	4.02	29.29
VA157	9.70	4.15	30.45
VA158	9.70	4.28	31.61
VA159	9.70	4.40	32.76
VA160	9.70	4.52	33.91
VA161	9.70	4.65	35.06
VA162	9.70	4.77	36.19
VA163	9.95	3.92	29.02
VA164	9.95	4.06	30.23
VA165	9.95	4.19	31.42
VA166	9.95	4.32	32.61
VA167	9.95	4.44	33.79
VA168	9.95	4.57	34.97
VA169	9.95	4.69	36.14
VA170	9.95	4.81	37.32

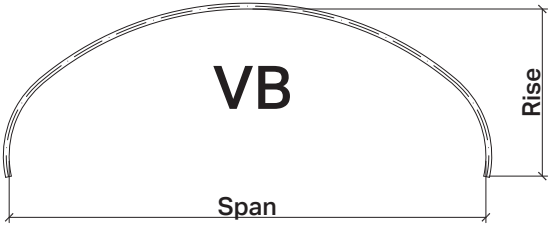




VIACON MULTIPLATE STRUCTURE - VS.... STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VS1	3.22	2.34	5.83
VS2	3.87	2.57	7.67
VS3	4.61	3.02	10.72
VS4	4.83	3.10	11.49
VS5	5.05	3.17	12.29
VS6	5.55	3.87	16.67
VS7	5.77	3.95	17.64
VS8	5.98	4.03	18.65
VS9	6.20	4.11	19.67
VS10	6.42	4.19	20.72
VS11	6.73	4.47	23.25
VS12	6.94	4.55	24.39
VS13	7.16	4.63	25.55
VS14	7.38	4.71	26.74
VS15	7.88	5.41	33.04
VS16	8.10	5.48	34.40
VS17	8.31	5.56	35.79
VS18	8.53	5.64	37.21
VS19	8.75	5.72	38.64
VS20	8.96	5.80	40.10
VS21	9.18	5.88	41.58
VS22	9.69	6.58	49.37
VS23	9.90	6.65	51.03
VS24	10.12	6.73	52.72
VS25	10.33	6.81	54.43
VS26	10.65	7.10	58.49
VS27	10.86	7.18	60.29
VS28	11.08	7.25	62.12
VS29	11.39	7.54	66.44
VS30	11.61	7.62	68.36

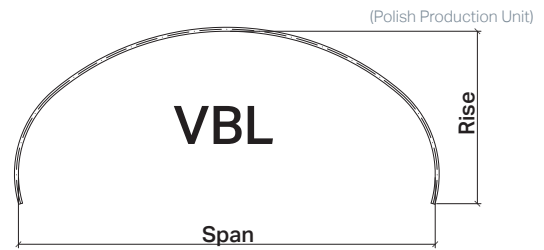




VIACON MULTIPLATE STRUCTURE - VB.... STANDARD PROFILES

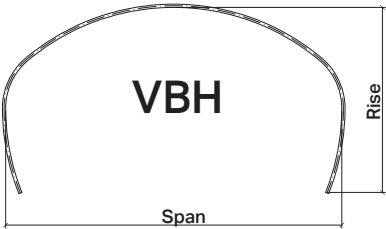
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VB1	3.20	1.34	3.48
VB2	3.85	1.46	4.52
VB3	4.50	1.58	5.66
VB4	4.72	1.62	6.06
VB5	5.40	2.29	10.03
VB6	5.62	2.33	10.59
VB7	5.83	2.37	11.17
VB8	6.05	2.41	11.76
VB9	6.27	2.45	12.36
VB10	6.48	2.49	12.97
VB11	6.70	2.53	13.59
VB12	7.07	2.78	15.83
VB13	7.29	2.82	16.52
VB14	7.50	2.86	17.22
VB15	7.72	2.90	17.94
VB16	7.94	2.94	18.66
VB17	8.15	2.97	19.40
VB18	8.37	3.01	20.15
VB19	9.05	3.69	26.99
VB20	9.27	3.73	27.90
VB21	9.48	3.77	28.82
VB22	9.70	3.81	29.76
VB23	9.92	3.85	30.70
VB24	10.13	3.88	31.66
VB25	10.35	3.92	32.63
VB26	10.72	4.18	36.05
VB27	10.94	4.21	37.09
VB28	11.15	4.25	38.14
VB29	11.37	4.29	39.20
VB30	11.59	4.33	40.57





VIACON MULTIPLATE STRUCTURE - VBL STANDARD PROFILES

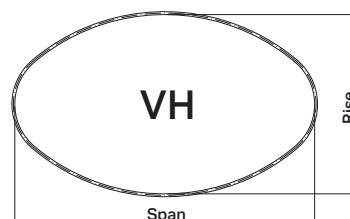
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VBL1	5.70	2.00	9.30
VBL2	5.77	2.38	11.41
VBL3	5.99	2.42	12.00
VBL4	6.08	2.41	12.03
VBL5	6.30	2.45	12.63
VBL6	6.52	2.49	13.25
VBL7	6.61	2.70	14.77
VBL8	6.83	2.74	15.45
VBL9	7.04	2.78	16.13
VBL10	7.23	2.99	17.81
VBL11	7.40	2.48	14.80
VBL12	7.67	3.07	19.31
VBL13	7.72	2.73	17.19
VBL14	7.88	3.11	20.08
VBL15	8.10	3.15	20.85
VBL16	8.20	3.11	22.73
VBL17	8.21	3.41	23.58
VBL18	8.46	2.84	19.32
VBL19	8.63	3.44	24.42
VBL20	8.89	2.92	20.80
VBL21	8.99	3.14	22.84
VBL22	9.21	3.18	23.65
VBL23	9.26	3.73	28.31
VBL24	9.47	3.77	29.23
VBL25	9.69	3.81	30.17
VBL26	9.78	4.03	32.42
VBL27	10.00	4.07	33.42
VBL28	10.17	3.55	29.28
VBL29	10.22	4.11	34.43
VBL30	10.31	4.10	34.47
VBL31	10.48	3.58	30.19
VBL32	10.53	4.13	35.48
VBL33	10.63	4.35	37.93
VBL34	10.75	4.17	36.52
VBL35	10.91	3.66	32.04
VBL36	10.96	4.21	37.56
VBL37	11.15	4.65	42.66
VBL38	11.27	4.47	41.20
VBL39	11.49	4.51	42.32
VBL40	11.80	4.77	46.15
VBL41	11.90	4.76	46.20
VBL42	12.09	4.96	49.00



VIACON MULTIPLATE STRUCTURE - VBH STANDARD PROFILES

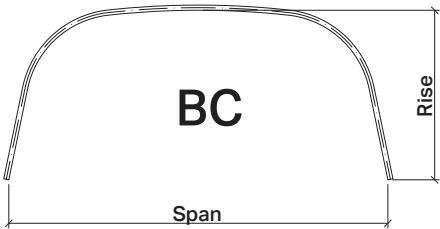
Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VBH1	5.70	3.14	15.61
VBH2	6.08	3.55	18.77
VBH3	6.30	3.59	19.65
VBH4	6.51	3.63	20.55
VBH5	7.40	4.08	26.27
VBH6	8.20	4.74	33.62
VBH7	8.41	4.78	34.79
VBH8	8.46	4.67	34.33
VBH9	8.63	5.04	37.70
VBH10	8.89	4.75	36.69
VBH11	9.26	5.33	42.66
VBH12	9.47	5.37	43.98
VBH13	9.69	5.63	47.25
VBH14	10.17	5.61	49.48
VBH15	10.31	5.93	52.77
VBH16	10.53	5.97	54.23
VBH17	10.75	6.23	57.87
VBH18	10.96	6.27	59.41
VBH19	11.15	6.48	62.35
VBH20	11.80	6.82	69.55





VIACON MULTIPLATE STRUCTURE - VH STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
VH1	5.70	3.41	15.26
VH2	5.77	3.95	18.11
VH3	5.98	4.03	19.13
VH4	6.08	4.24	20.47
VH5	6.30	4.32	21.55
VH6	6.51	4.39	22.66
VH7	6.61	4.60	24.40
VH8	6.83	4.68	25.79
VH9	7.04	4.76	27.18
VH10	7.23	5.17	28.57
VH11	7.40	4.38	29.96
VH12	7.67	5.33	31.35
VH13	7.72	4.66	32.74
VH14	7.88	5.41	34.13
VH15	8.10	5.49	35.52
VH16	8.20	5.69	36.91
VH17	8.91	5.77	38.30
VH18	8.46	5.10	39.69
VH19	8.63	5.85	41.08
VH20	8.89	5.26	42.47
VH21	8.89	5.47	43.86
VH22	9.21	5.55	45.25
VH23	9.25	6.42	46.64
VH24	9.47	6.50	48.03
VH25	9.69	6.58	49.42
VH26	9.78	6.78	50.81
VH27	10.00	6.86	52.20
VH28	10.17	6.07	53.59
VH29	10.22	6.94	54.98
VH30	10.31	7.15	56.37
VH31	10.48	6.35	57.76
VH32	10.53	7.23	59.15
VH33	10.62	7.43	60.54
VH34	10.75	7.30	61.93
VH35	10.91	6.51	63.32
VH36	10.96	7.38	64.71
VH37	11.15	7.80	66.10
VH38	11.27	7.67	67.49
VH39	11.49	7.75	68.89
VH40	11.80	8.03	70.28
VH41	11.90	8.24	71.67
VH42	12.09	8.65	73.06



VIACON MULTIPLATE STRUCTURE - BC STANDARD PROFILES

Name	Span - inner [m]	Rise - inner [m]	Area [m²]
BC1	3.14	1.20	3.13
BC2	3.49	1.39	4.17
BC3	3.79	1.47	4.89
BC4	3.81	1.22	4.00
BC5	4.04	1.81	6.27
BC6	4.16	1.30	4.69
BC7	4.51	1.38	5.44
BC8	4.69	1.97	8.13
BC9	4.84	1.60	6.82
BC10	5.17	1.69	7.73
BC11	5.27	1.42	6.45
BC12	5.30	2.04	9.59
BC13	5.61	1.52	7.34
BC14	6.07	1.42	7.33
BC15	6.11	1.89	10.20
BC16	6.26	1.60	8.58
BC17	6.43	2.00	11.33
BC18	6.44	2.35	13.60
BC19	6.59	1.71	9.64
BC20	6.92	1.82	10.76
BC21	6.95	2.17	13.20









VIACON
Constructing connections.
Consciously.