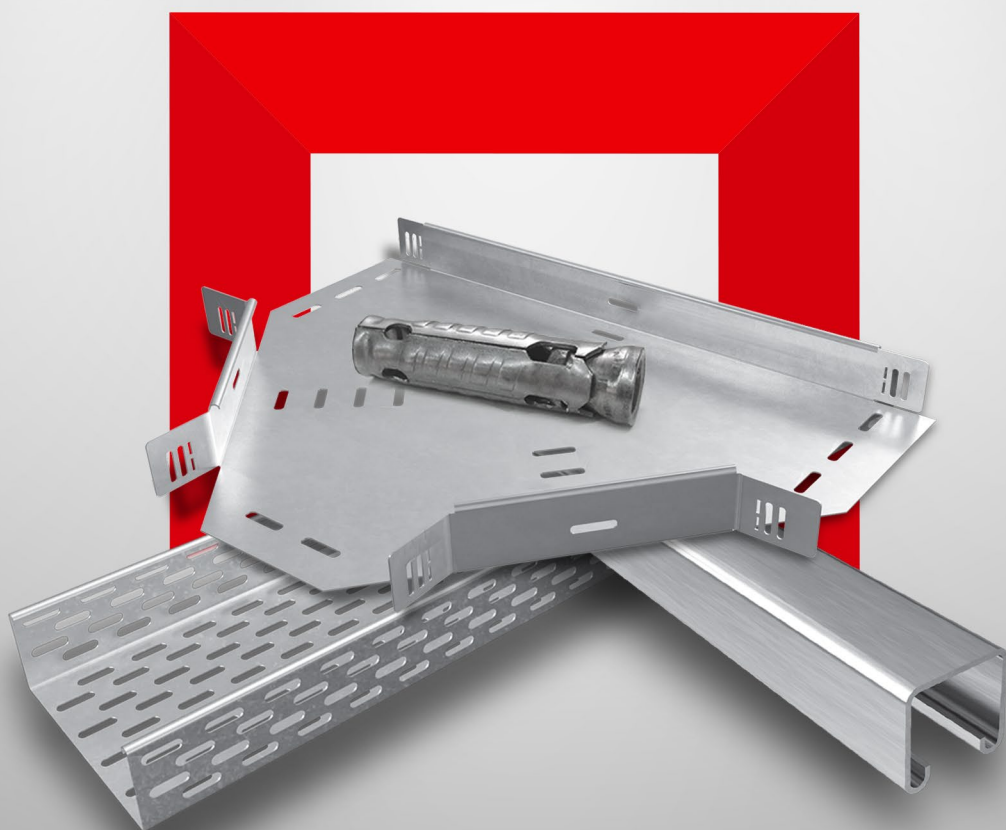


CABLE TRAY

catalogue.



We, in KIVOLT Team, aim not just to conduct business with our clients but to make win-win situations through adding value by supporting them with our expertise, knowledge and highly technical team. Our products and services are of high quality and high cost efficiency at the same time because we believe that this is the perfect combination in any market and at any level.

The company trades building and construction material that conform with international standards of quality and safety that are manufactured in international factories equipped with high tech robotics, welding machines, CNC machines and an in-house Galvanization facility.

Looking forward for future collaboration.

Kivolt Team

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1 GENERAL OVERVIEW

- Types Overview
- Materials & Finishes

TYPES OVERVIEW AND COMPONENTS

KIVOLT cable trays and accessories are manufactured in compliance with BS EN 61537, 2001/BS 5750/BS EN 10130/BS EN 10131/ BS EN 10051 and NEMA standards. And, as per cabling standards CENELEC EN 50173-1; EIA/ITA 568 A; ISO/IEC 11801; 2002.

MATERIALS & FINISHES

Pre-Galvanized, Hot-Dip Galvanized, Stainless Steel and Aluminium
Material Thickness: 1.00 mm 1.20 mm 1.50 mm 2.00 mm

LIGHT DUTY - CABLE TRAY SYSTEM

LCT - 100

Thickness : 1.00 mm

Side Height : 25 and 50 mm

Length :3000 mm

Width : 50 - 1000 mm

MEDIUM DUTY - CABLE TRAY SYSTEM

MCT - 120

Thickness : 1.20 mm

Side Height : 25 ,50 ,75 and 100 mm

Length : 3000 mm

Width : 50 - 1000 mm

HEAVY DUTY - CABLE TRAY SYSTEM

HCT - 150

Thickness : 1.50 mm

Side Height : 25 ,50 ,75 and 100 mm

Length :3000 mm

Width : 50 - 1000 mm

VERY HEAVY DUTY - CABLE TRAY SYSTEM

VCT - 200

Thickness : 2.00 mm


Side Height : 25 ,50 ,75 and 100 mm

Length : 2440 mm / 3000 mm

Width : 50 - 1000 mm

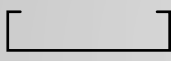
All illustrations, drawings and descriptive material in this publication are of a generally informative nature only, and do not form a complete package of the specifications or description of the goods . Most of the dimensions shown are nominal . KIVOLT can make modifications and design, materials or finishes as it deems necessary or desirable .

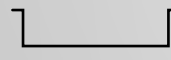
TYPES OF SIDE HEIGHTS

 Straight : STR

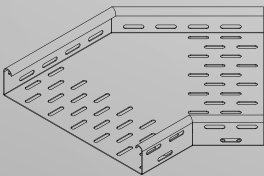
 Return Flange Inside: RFI

 Return Flange Outside: RFO

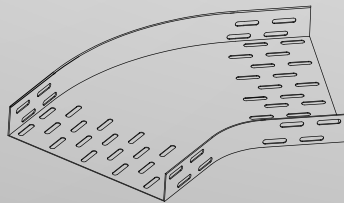
 C-Type Inside: CTI

 C-Type Outside: CTO

SHAPES OF ACCESSORIES

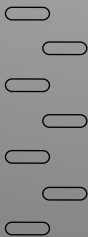


Cornered

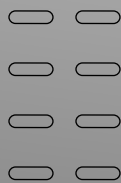


Curved

TYPES OF PERFORATION



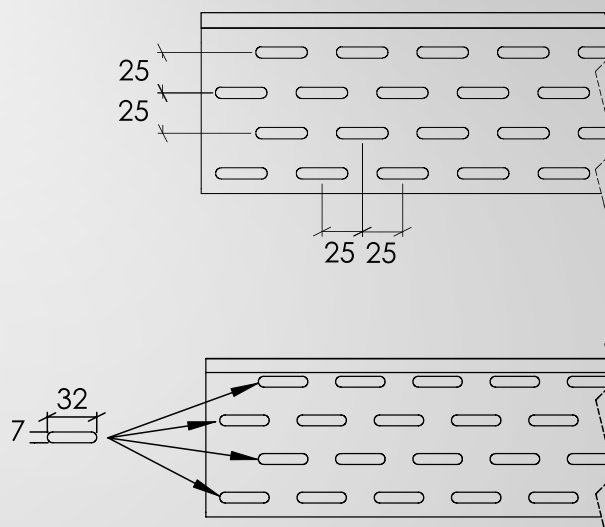
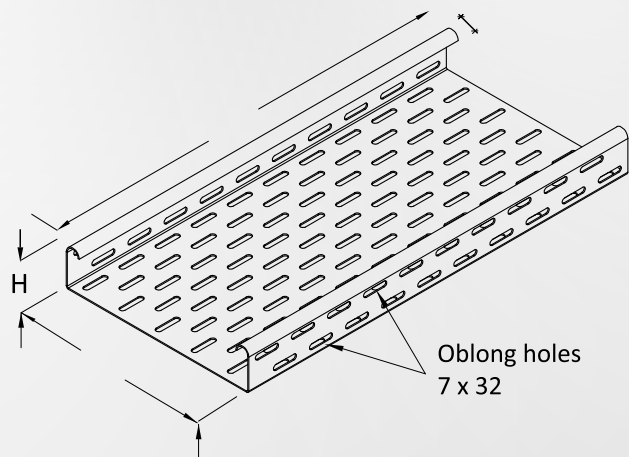
Staggered



Serial

DIMENSIONS

All dimensions are in mm.



MATERIALS

MILD STEEL - PLAIN

A. Hot Rolled Steel Plates, Sheets and Coils S235 JR, As per: EN 10025 -2 / DIN 17100 / BS 4360 / ASTM A 653M / ASTM A 1011 / ASTM A 1011-01a JIS 3101 / JIS 3106 / GB 700 / GB / T1591. ASTM A 907 / ASTM A 1018M. ASTM A 570M / ASTM A 572M.

B. Cold Rolled Steel DC 01, As per: EN 10130 / DIN 1623, Part 2 / BS 1449:1 / ASTM A366 / ASTM A 1008 / JIS G 3141 / GB 699. EN 10131 / ASTM A 568M

MILD STEEL - GALVANIZED

C. Continuously Pre- Galvanized Hot-Dip Zinc Coated Steel DX 51D + Z, As per: EN 10327 / DIN 17162 / BS 2989/ ASTM A 527M / ASTM A 653M / JIS G 3302. EN 10326/ EN 10142 / ASTM A 526, 527, 528/ ASTM A 146

D. Electro Galvanized Steel (Electrolytic Coating) DC01 + ZE, As per: EN 10152 / DIN 17163 / ASTM A591 / JIS G 3313 / JIS G 3141/BS 1449:1 EN 10131

STAINLESS STEEL

E. Austenitic Stainless Steels AISI 304 & 316, As per: ASTM A 240 /EN 10088-2/ DIN 17400 / BS 1449:2 / ASTM A480 / ASTM A666 / ISO 3506 / EN 10028-7 /JIS G 4304

E.1 Stainless Steel Fasteners, EN 3506

E.2 Stainless Steel Wire, BS 1554 ,ASTM A276

ALUMINIUM

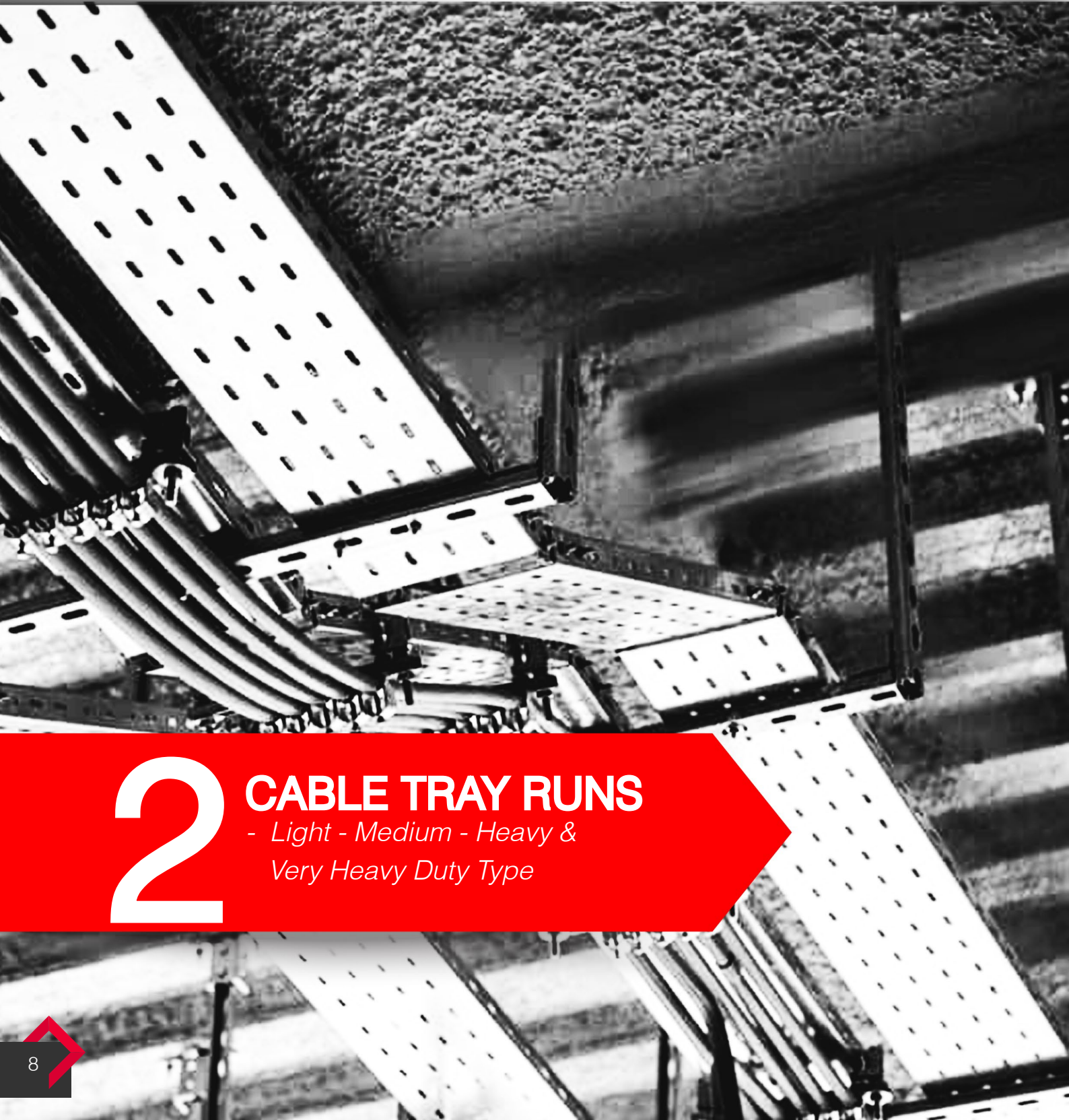
F. Aluminium, 5052 & 6063,

FINISHES

1- **Hot-DIP Galvanization After Fabrication**, As per: ASTM A 123 / ASTM A 153 / ISO 1461. BS 729 / DIN 50976

2- **Zinc Electroplating After Fabrication**, As per: ASTM B633 / EN 12329 / ISO 4042/ BS 1706 / BS 3382 / DIN 50961

3. **Powder Coating**, Epoxy / Polyester / Epoxy & Polyester BS 3900 / ISO 2409 / ISO 1519 / ISO 1520



2

CABLE TRAY RUNS

- *Light - Medium - Heavy & Very Heavy Duty Type*



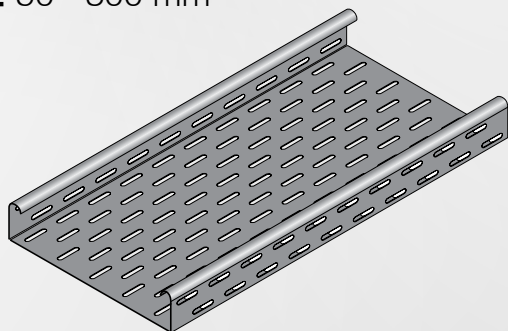
LIGHT DUTY

Thickness : 1.00 mm

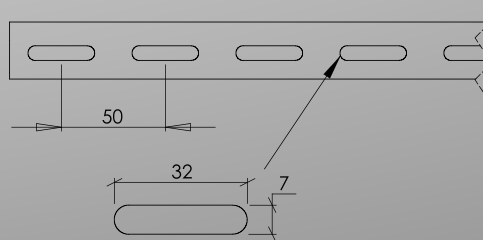
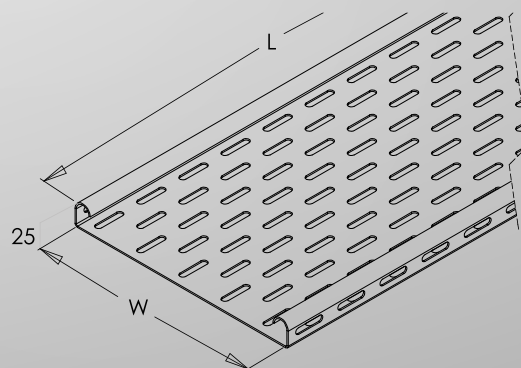
Side Height : 25 mm

Length : 3000 mm

Width : 50 - 300 mm



Cable tray	Support distance (m)	Load kN/m
LCT 25 - 50	1.00	0.65
width (w) : 50 mm	1.20	0.37
	1.50	0.18
	2.00	0.07
LCT 25- 100	1.00	0.75
width (w) : 100 mm	1.20	0.46
	1.50	0.23
	2.00	0.09
LCT 25- 150	1.00	0.68
width (w) : 150 mm	1.20	0.51
	1.50	0.25
	2.00	0.09
LCT 25- 200	1.00	0.68
width (w) : 200 mm	1.20	0.47
	1.50	0.26
	2.00	0.10
LCT 25- 225	1.00	0.52
width (w) : 225 mm	1.20	0.36
	1.50	0.22
	2.00	0.10
LCT 25- 300	1.00	0.27
width (w) : 300 mm	1.20	0.18
	1.50	0.10
	2.00	0.04





LIGHT DUTY

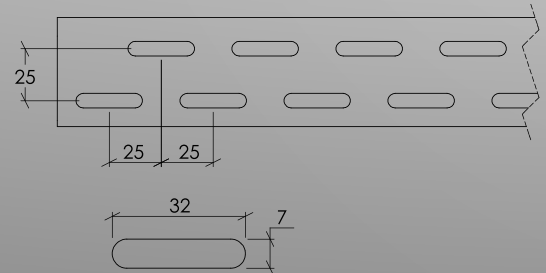
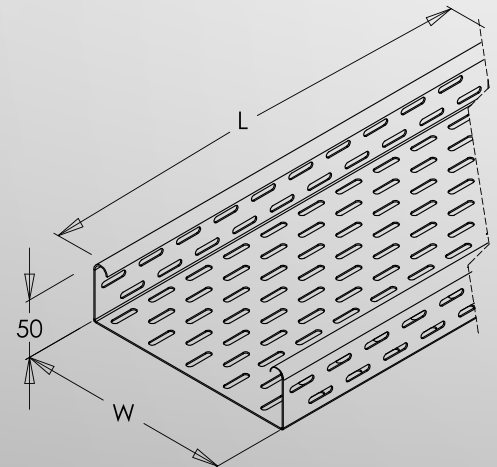
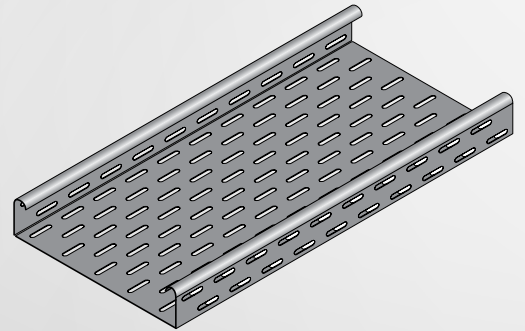
Thickness : 1.00 mm

Side Height : 50 mm

Length : 3000 mm

Width : 50 - 450 mm

Cable tray	Support distance (m)	Load kN/m
LCT 50- 50	1.00	1.92
width (w) : 50 mm	1.20	1.33
	1.50	0.84
	2.00	0.40
LCT 50- 100	1.00	2.10
width (w) : 100 mm	1.20	1.45
	1.50	0.92
	2.00	0.50
LCT 50- 150	1.00	2.19
width (w) : 150 mm	1.20	1.50
	1.50	0.96
	2.00	0.53
LCT 50- 200	1.00	1.73
width (w) : 200 mm	1.20	1.48
	1.50	0.94
	2.00	0.52
LCT 50- 225	1.00	1.52
width (w) : 225 mm	1.20	1.13
	1.50	0.72
	2.00	0.39
LCT 50- 300	1.00	0.87
width (w) : 300 mm	1.20	0.59
	1.50	0.37
	2.00	0.19
LCT 50- 400	1.00	0.45
width (w) : 400 mm	1.20	0.30
	1.50	0.18
	2.00	0.08
LCT 50- 450	1.00	0.34
width (w) : 450 mm	1.20	0.22
	1.50	0.13
	2.00	0.05





MEDIUM DUTY

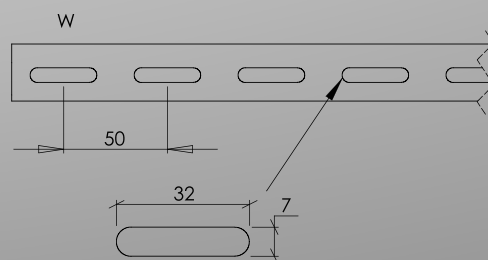
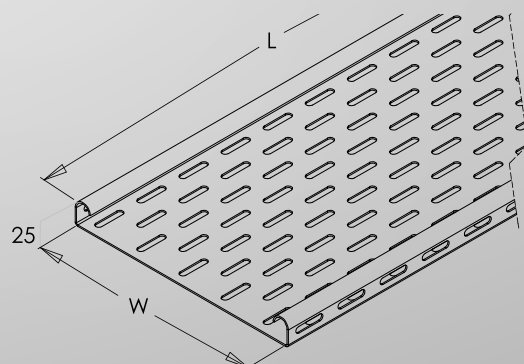
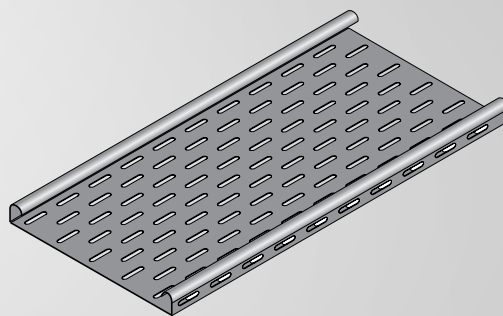
Thickness : 1.20 mm

Side Height : 25 mm

Length : 3000 mm

Width : 50 - 450 mm

Cable tray	Support distance (m)	Load kN/m
MCT 25 - 50	1.00	0.77
width (w) : 50 mm	1.20	0.44
	1.50	0.22
	2.00	0.08
MCT 25 - 100	1.00	0.90
width (w) : 100 mm	1.20	0.55
	1.50	0.27
	2.00	0.10
MCT 25 - 150	1.00	0.92
Width (w) : 150 mm	1.20	0.61
	1.50	0.30
	2.00	0.11
MCT 25 - 200	1.00	0.93
width (w) : 200	1.20	0.64
	1.50	0.32
	2.00	0.12
CT 25 - 220	1.00	0.93
width (w) : 225	1.20	0.64
	1.50	0.32
	2.00	0.12
MCT 25 - 300	1.00	0.48
width (w) : 300	1.20	0.32
	1.50	0.19
	2.00	0.09
MCT 25 - 400	1.00	0.24
width (w) : 400	1.20	0.15
	1.50	0.08
MCT 25 - 450	1.00	0.17
width (w) : 450	1.20	0.11





MEDIUM DUTY

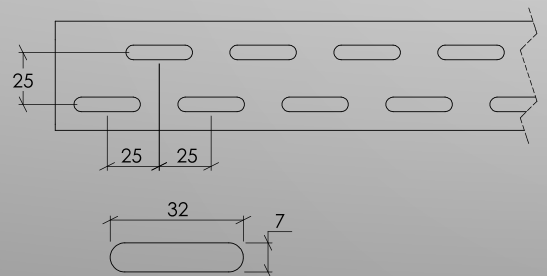
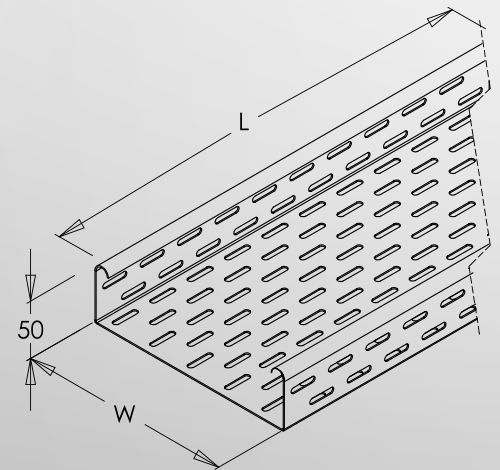
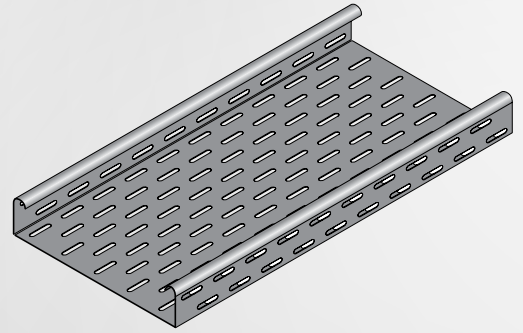
Thickness : 1.20 mm

Side Height : 50 mm

Length : 3000 mm

Width : 50 - 450 mm

Cable tray	Support distance (m)	Load kN/m
MCT 50 - 50	1.00	2.29
width (w) : 50 mm	1.20	1.59
	1.50	1.01
	2.00	0.48
MCT 50 - 100	1.00	2.51
width (w) : 100 mm	1.20	1.74
	1.50	1.10
	2.00	0.60
MCT 50 - 150	1.00	2.62
width (w) : 150 mm	1.20	1.80
	1.50	1.15
	2.00	0.63
MCT 50 - 200	1.00	2.48
width (w) : 200	1.20	1.85
	1.50	1.17
	2.00	0.65
MCT 50 - 225	1.00	2.20
width (w) : 225	1.20	1.85
	1.50	1.18
	2.00	0.65
MCT 50 - 300	1.00	1.52
width (w) : 300	1.20	1.04
	1.50	0.65
	2.00	0.35
MCT 50 - 400	1.00	0.80
width (w) : 400	1.20	0.54
	1.50	0.33
	2.00	0.16
MCT 50 - 450	1.00	0.61
width (w) : 450	1.20	0.41
	1.50	0.24
	2.00	0.11





MEDIUM DUTY

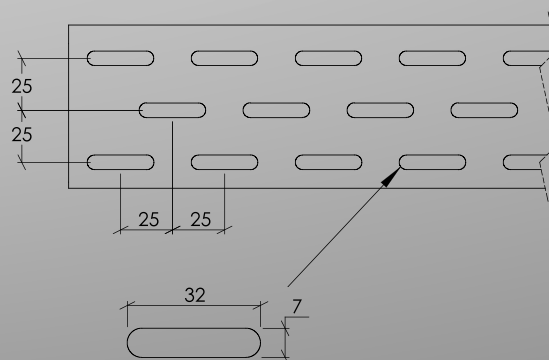
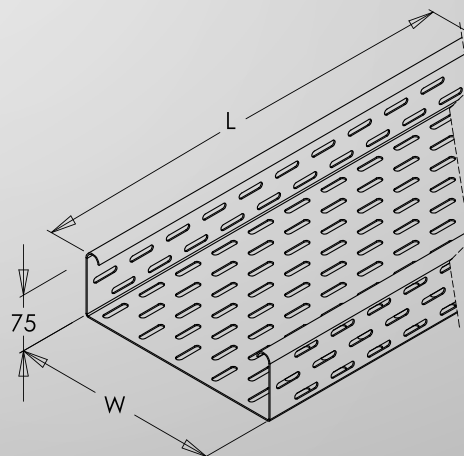
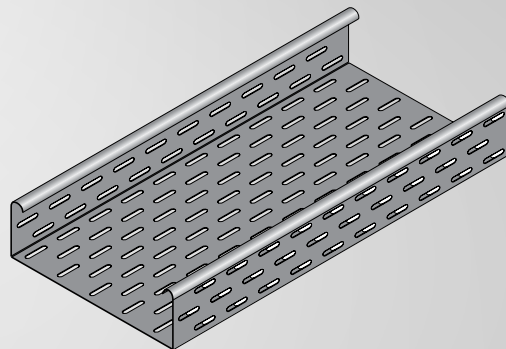
Thickness : 1.20 mm

Side Height : 75 mm

Length : 3000 mm

Width : 100 - 450 mm

Cable tray	Support distance (m)	Load kN/m
MCT 75 - 100	1.00	4.45
width (w) : 100 mm	1.20	3.26
	1.50	2.08
	2.00	1.16
MCT 75 - 150	1.00	4.53
width (w) : 150 mm	1.20	3.32
	1.50	2.19
	2.00	1.22
MCT 75 - 200	1.00	2.48
width (w) : 200	1.20	2.48
	1.50	2.26
	2.00	1.25
MCT 75 - 225	1.00	2.20
width (w) : 225	1.20	2.20
	1.50	2.20
	2.00	1.27
MCT 75 - 300	1.00	1.63
width (w) : 300	1.20	1.63
	1.50	1.37
	2.00	0.75
MCT 75 - 400	1.00	1.21
width (w) : 400	1.20	1.14
	1.50	0.71
	2.00	0.38
MCT 75 - 450	1.00	1.06
width (w) : 450	1.20	0.87
	1.50	0.54
	2.00	0.28





MEDIUM DUTY

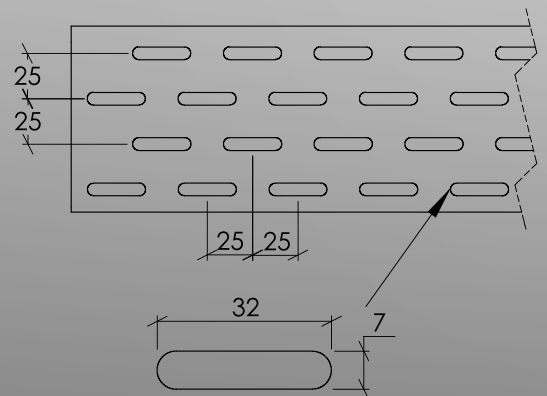
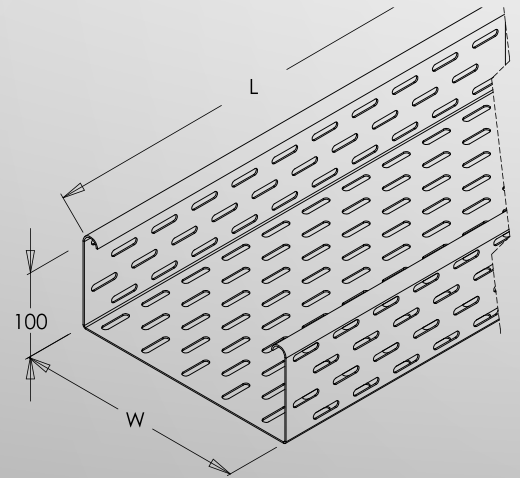
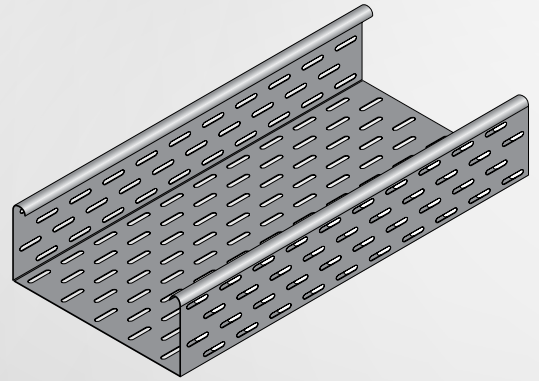
Thickness : 1.20 mm

Side Height : 100 mm

Length : 3000 mm

Width : 100 - 450 mm

Cable tray	Support distance (m)	Load kN/m
MCT 100 - 100	1.00	5.00
width (w) : 100 mm	1.20	4.86
	1.50	3.30
	2.00	1.84
MCT 100 - 150	1.00	3.32
width (w) : 150 mm	1.20	3.32
	1.50	3.03
	2.00	1.95
MCT 100 - 200	1.00	2.47
width (w) : 200 mm	1.20	2.47
	1.50	2.47
	2.00	2.02
MCT 100 - 225	1.00	2.19
width (w) : 225 mm	1.20	2.19
	1.50	2.19
	2.00	2.05
MCT 100 - 300	1.00	1.63
width (w) : 300 mm	1.20	1.63
	1.50	1.63
	2.00	1.30
MCT 100 - 400	1.00	1.20
width (w) : 400 mm	1.20	1.20
	1.50	1.20
	2.00	0.67
MCT 100 - 450	1.00	1.06
width (w) : 450 mm	1.20	1.06
	1.50	0.94
	2.00	0.50





HEAVY DUTY

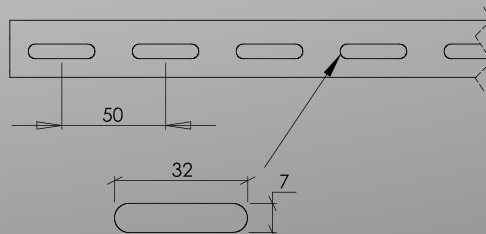
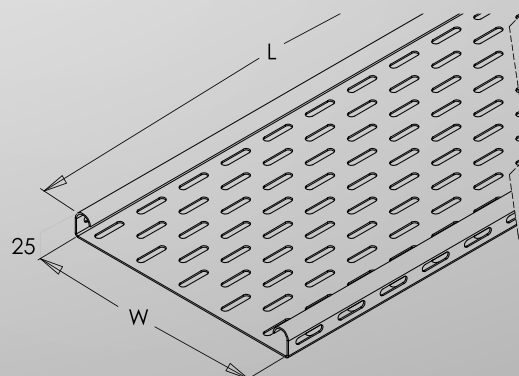
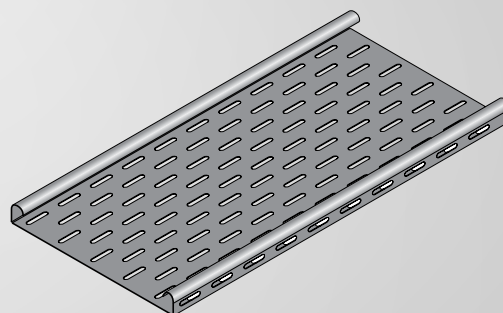
Thickness : 1.50 mm

Side Height : 25 mm

Length : 3000 mm

Width : 100 - 600 mm

Cable tray	Support distance (m)	Load kN/m
HCT 25 - 50	1.00	0.95
width (w) : 50 mm	1.20	0.54
	1.50	0.27
	2.00	0.10
HCT 25 - 100	1.00	1.11
width (w) : 100 mm	1.20	0.68
	1.50	0.34
	2.00	0.13
HCT 25 - 150	1.00	1.13
width (w) : 150 mm	1.20	0.75
	1.50	0.37
	2.00	0.14
HCT 25 - 200	1.00	1.15
width (w) : 200	1.20	0.78
	1.50	0.39
	2.00	0.14
HCT 25 - 225	1.00	1.15
width (w) : 225	1.20	0.79
	1.50	0.40
	2.00	0.15
HCT 25 - 300	1.00	0.95
width (w) : 300	1.20	0.65
	1.50	0.40
	2.00	0.14
HCT 25 - 400	1.00	0.49
width (w) : 400	1.20	0.33
	1.50	0.18
	2.00	0.08
HCT 25 - 450	1.00	0.37
width (w) : 450	1.20	0.24
	1.50	0.13
	2.00	0.05
HCT 25 - 500	1.00	0.28
width (w) : 500	1.20	0.18
	1.50	0.09
HCT 25 - 600	1.00	0.16
width (w) : 600	1.20	0.09





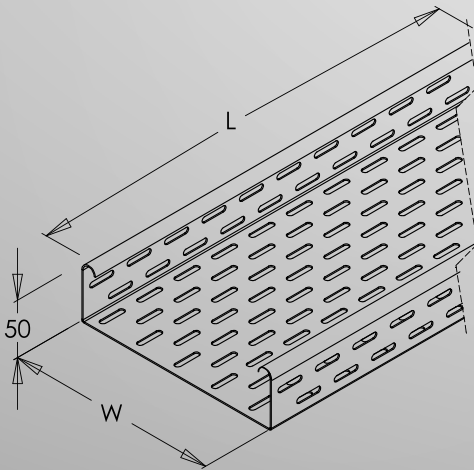
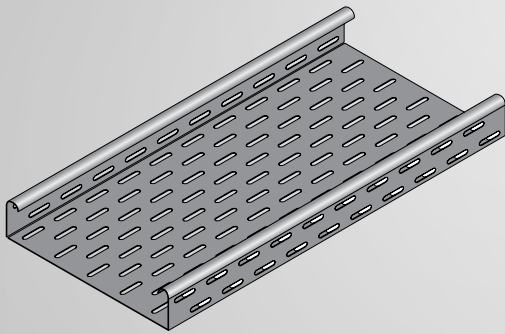
HEAVY DUTY

Thickness : 1.50 mm

Side Height : 50 mm

Length : 3000 mm

Width : 50 - 900 mm



Cable tray	Support distance (m)	Load kN/m
HCT 50 - 750	1.00	0.35
width (w) : 750	1.20	0.22
	1.50	0.10
HCT 50 - 900	1.00	0.20
width (w) : 900	1.20	0.10
	1.50	0.03

Cable tray	Support distance (m)	Load kN/m
HCT 50 - 50	1.00	2.85
width (w) : 50 mm	1.20	1.97
	1.50	1.25
	2.00	0.60
HCT 50 - 100	1.00	3.12
width (w) : 100 mm	1.20	2.16
	1.50	1.37
	2.00	0.76
HCT 50 - 150	1.00	3.25
width (w) : 150 mm	1.20	2.25
	1.50	1.43
	2.00	0.78
HCT 50 - 200	1.00	3.30
width (w) : 200	1.20	2.30
	1.50	1.45
	2.00	0.80
HCT 50 - 225	1.00	3.33
width (w) : 225	1.20	2.32
	1.50	1.47
	2.00	0.80
HCT 50 - 300	1.00	2.57
width (w) : 300	1.20	2.06
	1.50	1.30
	2.00	0.70
HCT 50 - 400	1.00	1.60
width (w) : 400	1.20	1.05
	1.50	0.65
	2.00	0.35
HCT 50 - 450	1.00	1.23
width (w) : 450	1.20	0.83
	1.50	0.50
	2.00	0.25
HCT 50 - 500	1.00	0.95
width (w) : 500	1.20	0.65
	1.50	0.35
	2.00	0.19
HCT 50 - 600	1.00	0.63
width (w) : 600	1.20	0.41
	1.50	0.24
	2.00	0.10
HCT 50 - 700	1.00	0.43
width (w) : 700	1.20	0.27
	1.50	0.14



HEAVY DUTY

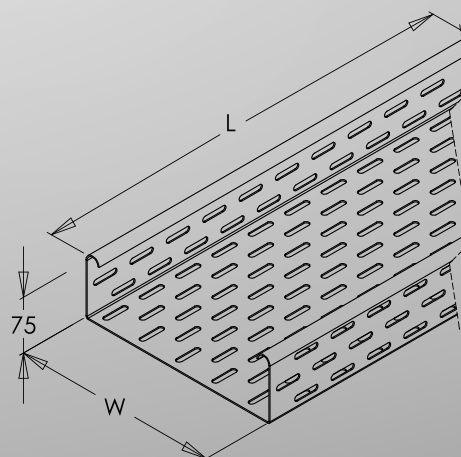
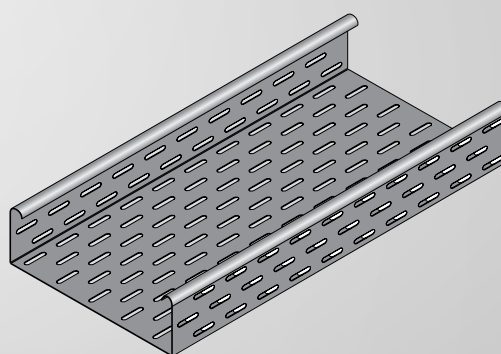
Thickness : 1.50 mm

Side Height : 75mm

Length : 3000 mm

Width : 100 - 700 mm

Cable tray	Support distance (m)	Load kN/m
HCT 75- 100	1.00	5.50
width (w) : 100 mm	1.20	4.05
	1.50	2.55
	2.00	1.42
HCT 75- 150	1.00	5.20
width (w) : 150 mm	1.20	4.20
	1.50	2.70
	2.00	1.50
HCT 75- 200	1.00	3.89
width (w) : 200 mm	1.20	3.89
	1.50	2.80
	2.00	1.56
HCT 75- 225	1.00	3.45
width (w) : 225 mm	1.20	3.45
	1.50	2.85
	2.00	1.58
HCT 75- 300	1.00	2.57
width (w) : 300 mm	1.20	2.57
	1.50	2.57
	2.00	1.49
HCT 75- 400	1.00	1.90
width (w) : 400 mm	1.20	1.90
	1.50	1.43
	2.00	0.77
HCT 75- 450	1.00	1.68
width (w) : 450 mm	1.20	1.68
	1.50	1.08
	2.00	0.58
HCT 75- 500	1.00	1.50
width (w) : 500 mm	1.20	1.38
	1.50	0.86
	2.00	0.45
HCT 75- 600	1.00	1.22
width 600 mm	1.20	0.90
	1.50	0.55
	2.00	0.27
HCT 75- 700	1.00	0.94
width 700 mm	1.20	0.63
	1.50	0.37
	2.00	0.16





HEAVY DUTY

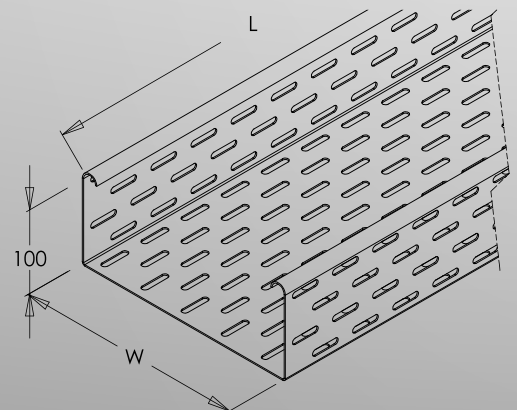
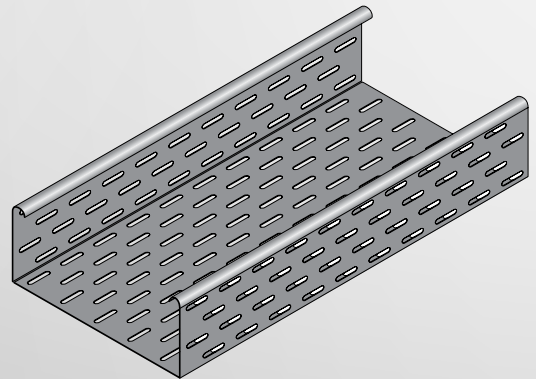
Thickness : 1.50 mm

Side Height : 50 mm

Length : 3000 mm

Width : 50 - 900 mm

Cable tray	Support distance (m)	Load kN/m
HCT 100 - 100	1.00	7.82
width (w) : 100 mm	1.20	6.07
	1.50	4.10
	2.00	2.30
HCT 100 - 150	1.00	5.19
width (w) : 150 mm	1.20	5.19
	1.50	4.35
	2.00	2.42
HCT 100 - 200	1.00	3.88
width (w) : 200 mm	1.20	3.88
	1.50	3.88
	2.00	2.52
HCT 100 - 225	1.00	3.44
width (w) : 225 mm	1.20	3.44
	1.50	3.44
	2.00	2.56
HCT 100 - 300	1.00	2.56
width (w) : 300 mm	1.20	2.56
	1.50	2.56
	2.00	2.56
HCT 100 - 400	1.00	1.89
width (w) : 400 mm	1.20	1.89
	1.50	1.89
	2.00	1.35
HCT 100 - 450	1.00	1.67
width (w) : 450 mm	1.20	1.67
	1.50	1.67
	2.00	1.00
	2.50	0.63
HCT 100 - 500	1.00	1.49
width (w) : 500 mm	1.20	1.49
	1.50	1.49
	2.00	0.80
HCT 100 - 600	1.00	1.22
width 600 mm	1.20	1.22
	1.50	0.98
	2.00	0.50
HCT 100 - 700	1.00	1.02
width 700 mm	1.20	1.02
	1.50	0.67
	2.00	0.33





VERY HEAVY DUTY

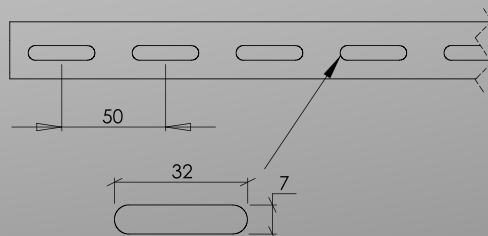
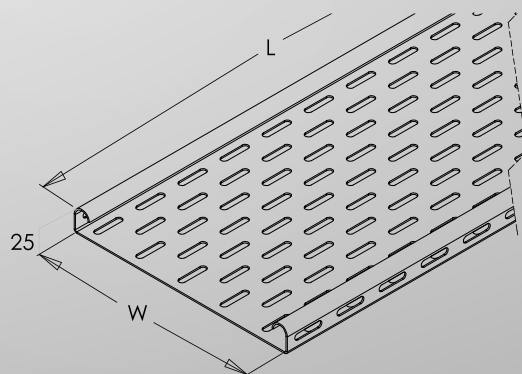
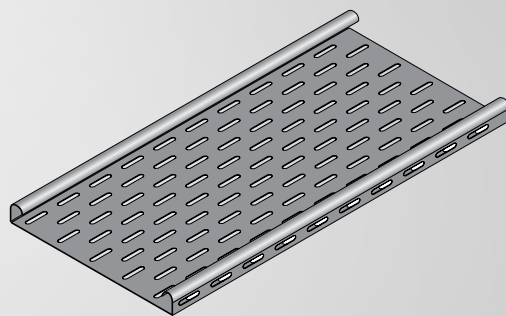
Thickness : 2.0 mm

Side Height : 25 mm

Length : 3000 mm

Width : 50 - 450 mm

Cable tray	Support distance (m)	Load kN/m
VCT 25 - 50	1.00	1.23
width (w) : 50 mm	1.20	0.70
	1.50	0.35
	2.00	0.14
VCT 25 - 100	1.00	1.45
width (w) : 100 mm	1.20	0.88
	1.50	0.42
	2.00	0.17
VCT 25 - 150	1.00	1.48
width (w) : 150 mm	1.20	0.98
	1.50	0.48
	2.00	0.18
VCT 25 - 200	1.00	1.50
width (w) : 200	1.20	1.03
	1.50	0.50
	2.00	0.18
VCT 25 - 225	1.00	1.50
width (w) : 225	1.20	1.03
	1.50	0.52
	2.00	0.18
VCT 25 - 300	1.00	1.52
width (w) : 300	1.20	1.04
	1.50	0.53
	2.00	0.18
VCT 25 - 400	1.00	1.20
width (w) : 400	1.20	0.82
	1.50	0.50
	2.00	0.18
VCT 25 - 450	1.00	0.92
width (w) : 450	1.20	0.62
	1.50	0.37
	2.00	0.18





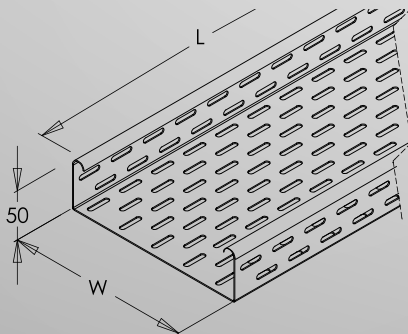
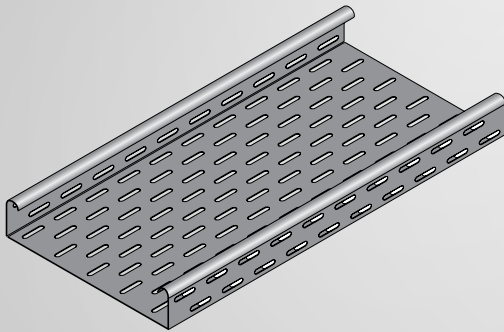
VERY HEAVY DUTY

Thickness : 2.0 mm

Side Height : 50 mm

Length : 3000 mm

Width : 50 - 1000 mm



Cable tray	Support distance (m)	Load kN/m
VCT 50 - 800	1.00	0.80
width (w) : 800	1.20	0.50
	1.50	0.28
	2.00	0.10
VCT 50 - 900	1.00	0.58
width (w) : 900	1.20	0.36
	1.50	0.18
VCT 50 - 1000	1.00	0.43
width (w) : 1000	1.20	0.25
	1.50	0.10

Cable tray	Support distance (m)	Load kN/m
VCT 50 - 50	1.00	3.77
width (w) : 50 mm	1.20	2.60
	1.50	1.65
	2.00	0.78
VCT 50 - 100	1.00	4.13
width (w) : 100 mm	1.20	2.86
	1.50	1.83
	2.00	1.00
VCT 50 - 150	1.00	4.30
width (w) : 150 mm	1.20	2.98
	1.50	1.88
	2.00	1.05
VCT 50 - 200	1.00	4.40
width (w) : 200	1.20	3.05
	1.50	1.92
	2.00	1.07
VCT 50 - 225	1.00	4.43
width (w) : 225	1.20	3.06
	1.50	1.95
	2.00	1.07
VCT 50 - 300	1.00	4.47
width (w) : 300	1.20	3.12
	1.50	1.97
	2.00	1.08
VCT 50 - 400	1.00	3.42
width (w) : 400	1.20	2.64
	1.50	1.66
	2.00	0.90
VCT 50 - 450	1.00	2.97
width (w) : 450	1.20	2.04
	1.50	1.27
	2.00	0.68
VCT 50 - 500	1.00	2.36
width (w) : 500	1.20	1.60
	1.50	1.00
	2.00	0.50
VCT 50 - 600	1.00	1.57
width (w) : 600	1.20	1.06
	1.50	0.64
	2.00	0.32
VCT 50 - 700	1.00	1.10
width (w) : 700	1.20	0.72
	1.50	0.42
	2.00	0.19



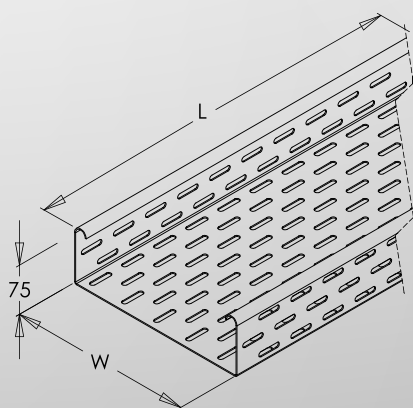
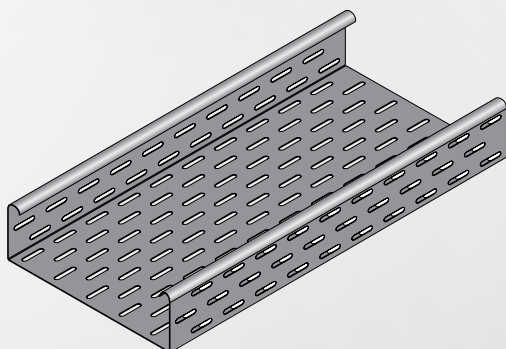
VERY HEAVY DUTY

Thickness : 2.0 mm

Side Height : 75 mm

Length : 3000 mm

Width : 100 - 1000 mm



Cable tray	Support distance (m)	Load kN/m
VCT 75 - 900	1.00	1.30
width (w) : 900	1.20	0.86
	1.50	0.50
	2.00	0.21
VCT 75 - 1000	1.00	1.01
width (w) : 1000	1.20	0.65
	1.50	0.36
	2.00	0.13

Cable tray	Support distance (m)	Load kN/m
VCT 75 - 100	1.00	7.31
width (w) : 100 mm	1.20	5.39
	1.50	3.44
	2.00	1.92
VCT 75 - 150	1.00	7.52
width (w) : 150 mm	1.20	5.62
	1.50	3.62
	2.00	2.02
VCT 75 - 200	1.00	6.92
width (w) : 200	1.20	5.72
	1.50	3.73
	2.00	2.07
VCT 75 - 300	1.00	4.58
width (w) : 300	1.20	4.58
	1.50	3.86
	2.00	2.13
VCT 75 - 400	1.00	3.40
width (w) : 400	1.20	3.40
	1.50	3.40
	2.00	1.90
VCT 75 - 450	1.00	3.00
width (w) : 450	1.20	3.00
	1.50	2.65
	2.00	1.45
VCT 75 - 500	1.00	2.70
width (w) : 500	1.20	2.70
	1.50	2.10
	2.00	1.13
VCT 75 - 600	1.00	2.22
width (w) : 600	1.20	2.22
	1.50	1.38
	2.00	0.73
VCT 75 - 700	1.00	1.87
width (w) : 700	1.20	1.58
	1.50	0.95
	2.00	0.49
VCT 75 - 800	1.00	1.60
width (w) : 800	1.20	1.15
	1.50	0.68
	2.00	0.33



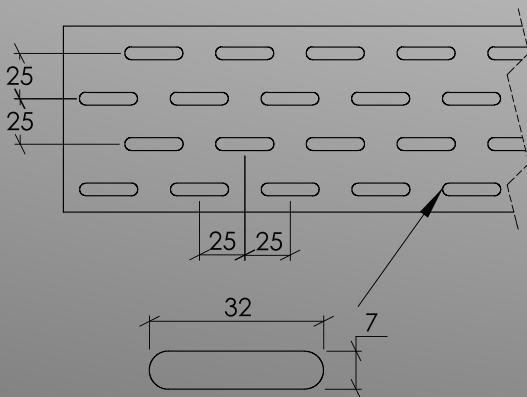
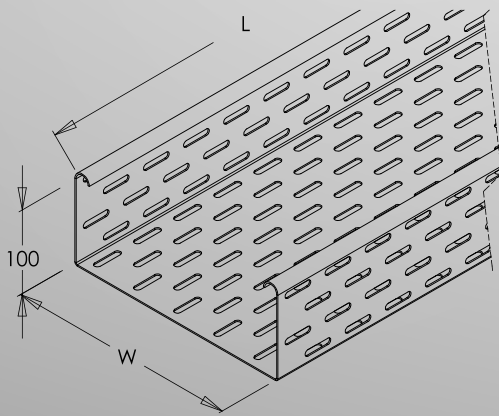
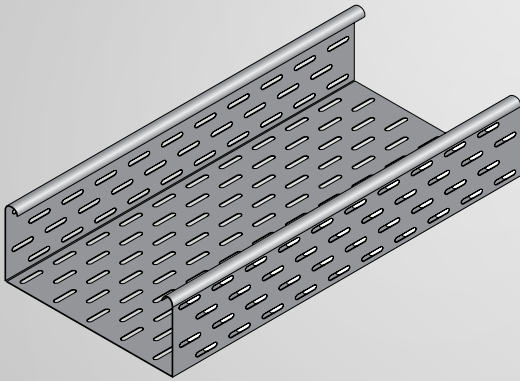
VERY HEAVY DUTY

Thickness : 2.0 mm

Side Height : 100 mm

Length : 3000 mm

Width : 100 - 1000 mm



Cable tray	Support distance (m)	Load kN/m
VCT 100 - 100	1.00	10.65
width (w) : 100 mm	1.20	8.07
	1.50	5.46
	2.00	3.05
VCT 100 - 150	1.00	9.25
width (w) : 150 mm	1.20	8.34
	1.50	5.78
	2.00	3.23
VCT 100 - 200	1.00	6.92
width (w) : 200 mm	1.20	6.92
	1.50	5.95
	2.00	3.35
VCT 100 - 300	1.00	4.58
width (w) : 300 mm	1.20	4.58
	1.50	4.58
	2.00	3.48
VCT 100 - 400	1.00	3.40
width (w) : 400 mm	1.20	3.40
	1.50	3.40
	2.00	3.25
VCT 100 - 500	1.00	2.69
width (w) : 500 mm	1.20	2.69
	1.50	2.69
	2.00	1.98
VCT 100 - 600	1.00	2.20
width (w) : 600 mm	1.20	2.20
	1.50	2.20
	2.00	1.30
VCT 100 - 700	1.00	1.86
width (w) : 700 mm	1.20	1.86
	1.50	1.70
	2.00	0.90
VCT 100 - 800	1.00	1.60
width (w) : 800 mm	1.20	1.60
	1.50	1.23
	2.00	0.63
VCT 100 - 900	1.00	1.39
width (w) : 900 mm	1.20	1.39
	1.50	0.92
	2.00	0.45
VCT 100 - 1000	1.00	1.79
width (w) : 1000 mm	1.20	1.18
	1.50	0.70
	2.00	0.32



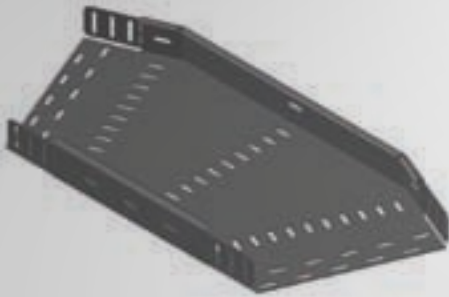
3

CABLE TRAY FITTINGS

*- Bend 45°, Bend 90°, Intersection,
Tee Branch, Vertical 90° Outside &
Inside Riser, Adjustable Riser, Reducer &
Add-on-Branch*

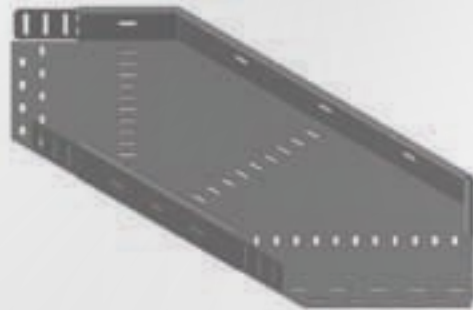
BEND 45°

CNC



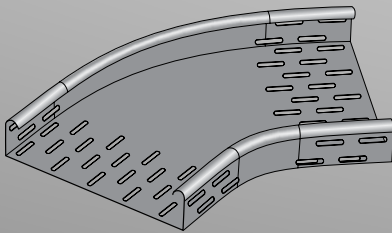
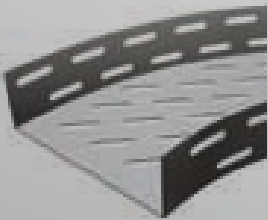
BEND 90°

CNC



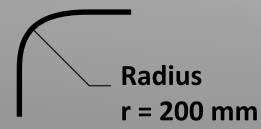
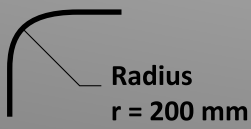
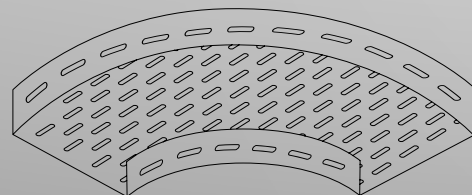
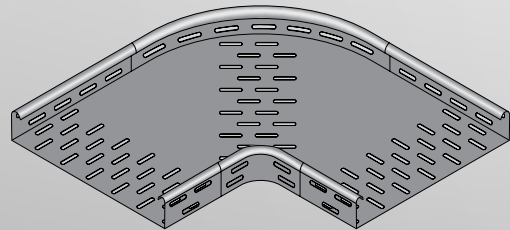
BEND 45°

Curved



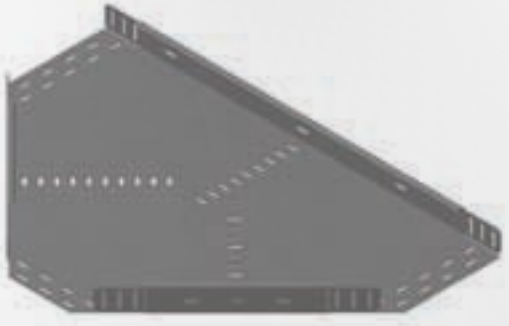
BEND 90°

Curved



TEE Branch

CNC



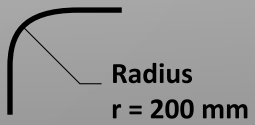
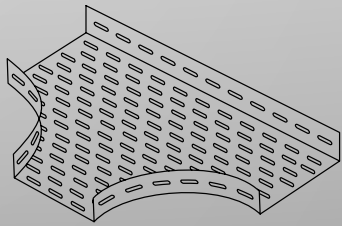
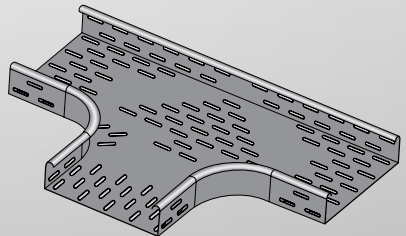
INTERSECTION

CNC



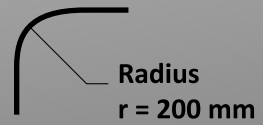
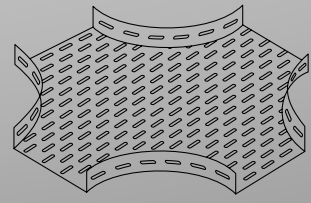
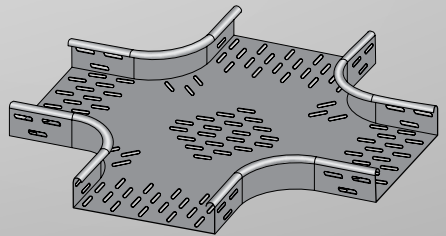
TEE Branch

Curved



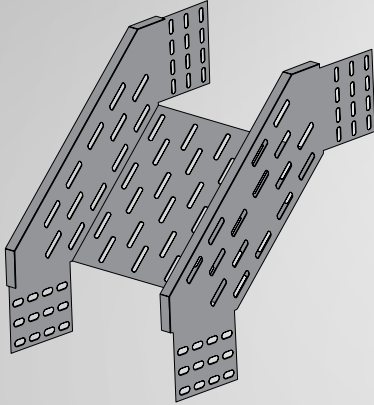
INTERSECTION

Curved



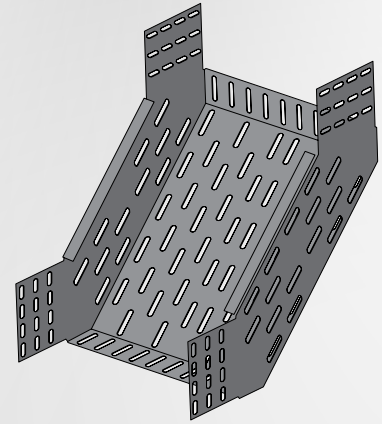
VERTICAL OUTSIDE RISER 90°

CNC



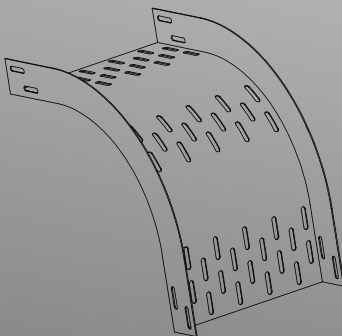
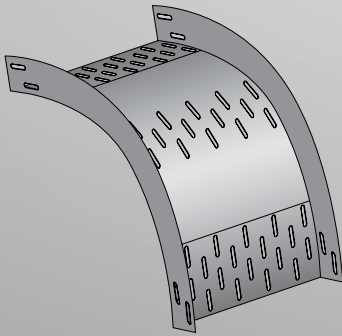
VERTICAL INSIDE RISER 90°

CNC



VERTICAL OUTSIDE RISER 90°

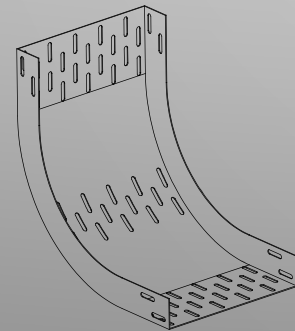
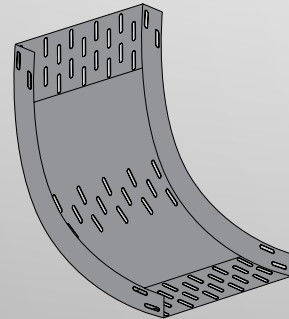
Curved



Radius
 $r = 200 \text{ mm}$

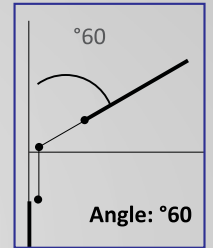
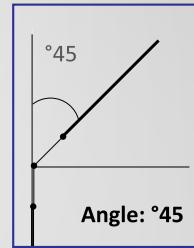
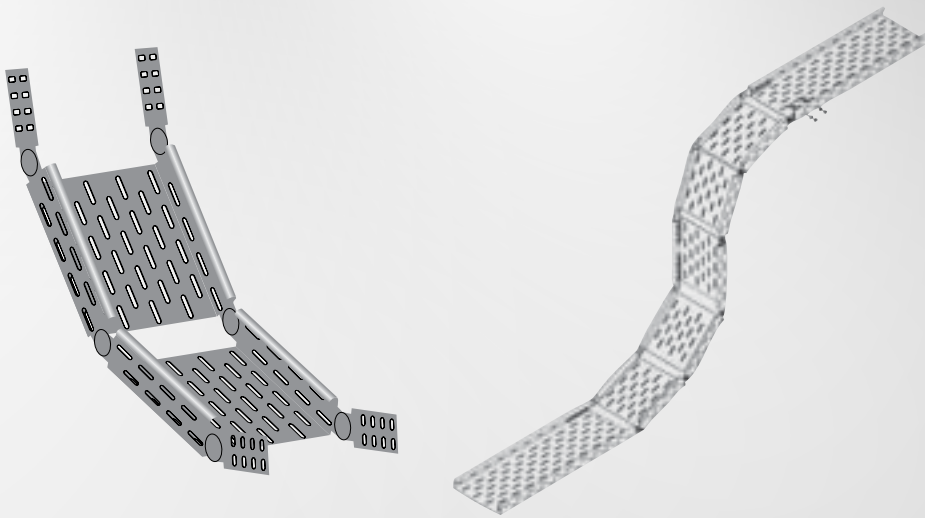
VERTICAL INSIDE RISER 90°

Curved



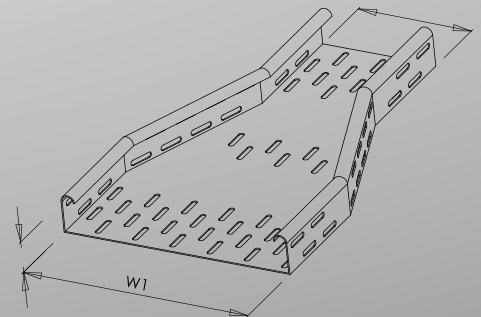
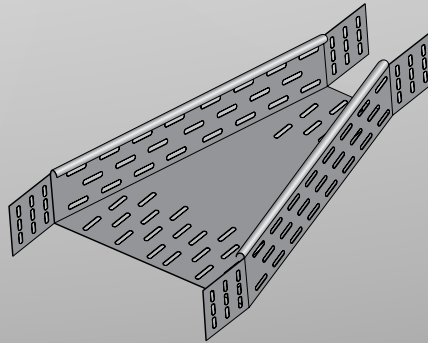
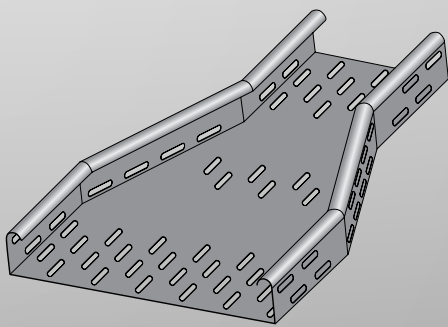
Radius
 $r = 200 \text{ mm}$

ADJUSTABLE RISER

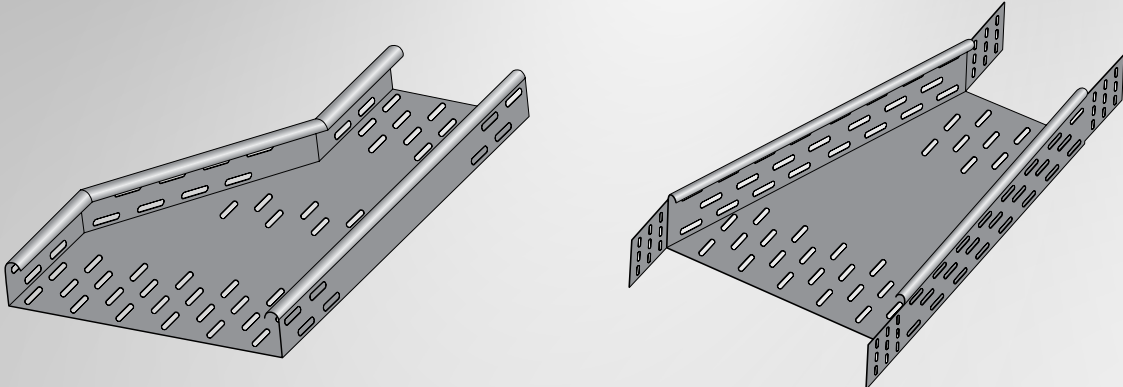


REDUCER

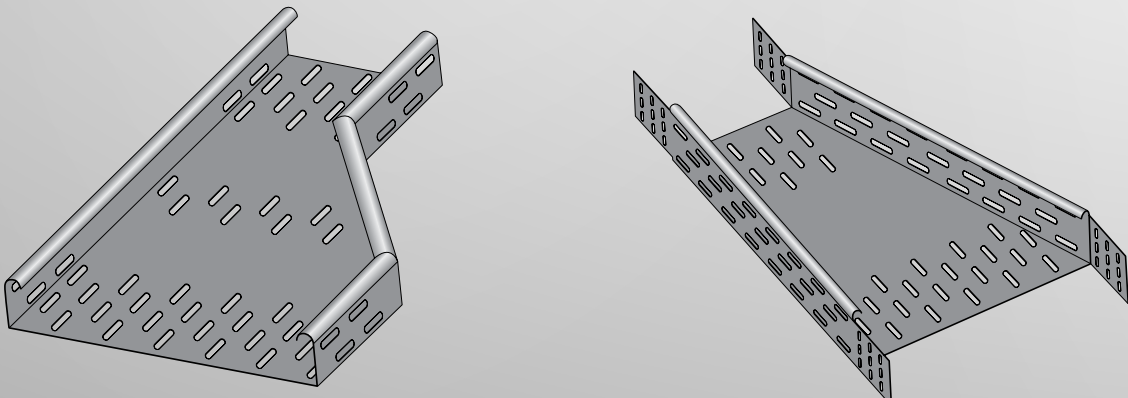
Central



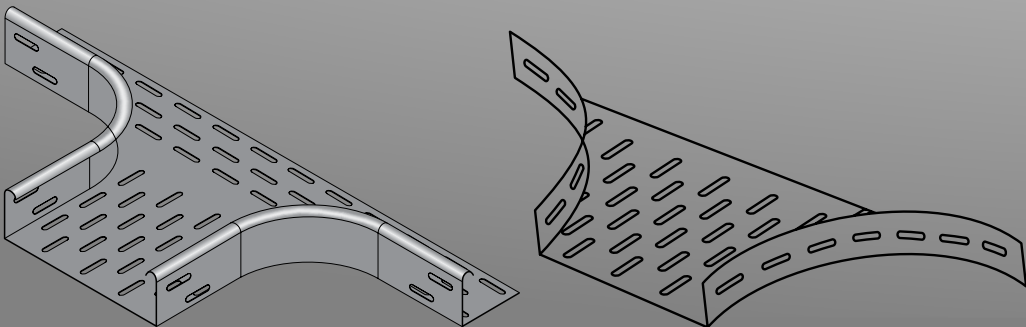
RIGHT SIDE



LEFT SIDE



ADD-ON BRANCH



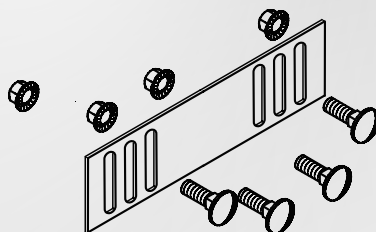
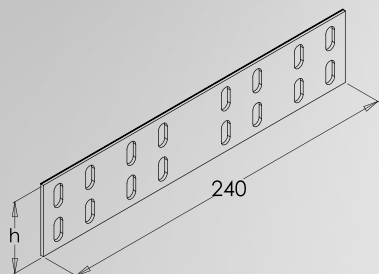
Radius
 $r = 200 \text{ mm}$

4

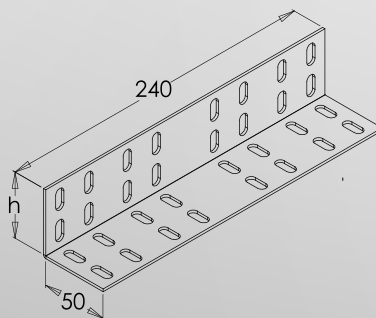
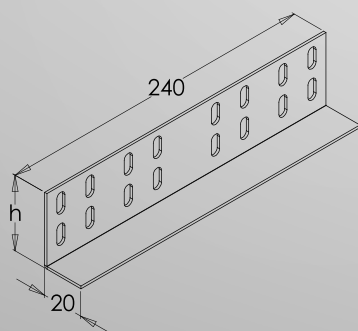
CABLE TRAY ACCESSORIES

- Connector, Barrier Strip, Joint Plate, Reducing Angle, End Plate, Drop-out Plate, Cable Tray Cover, Framing System Acc.

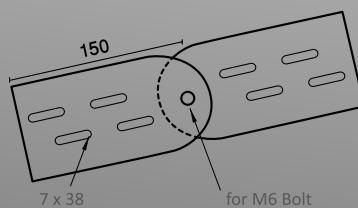
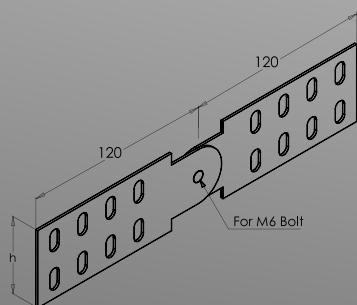
STRAIGHT CONNECTOR



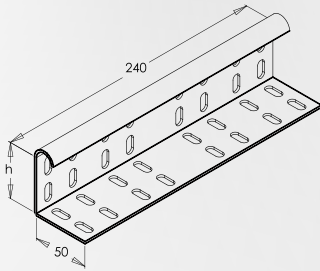
ANGLE CONNECTOR



ADJUSTABLE CONNECTOR

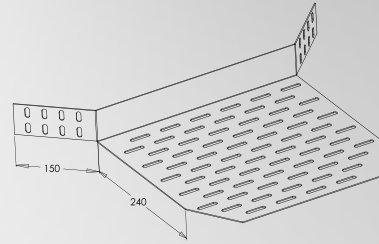


WRAP-OVER CONNECTOR



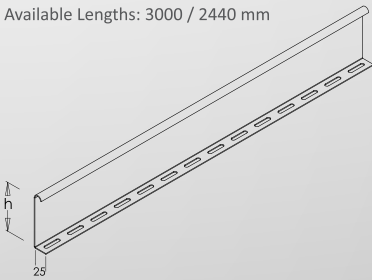
Available with different side height types.

CORNER CONNECTOR



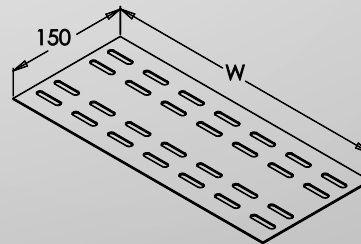
BARRIER STRIP

Available Lengths: 3000 / 2440 mm

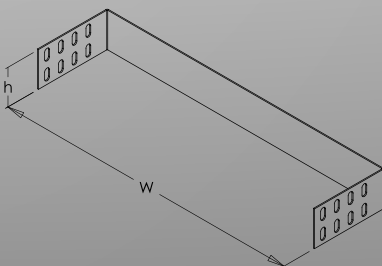


JOINT PLATE/ FISH PLATE

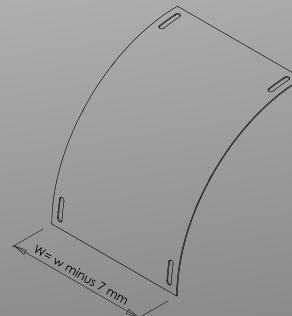
Width = width of tray minus 7 mm



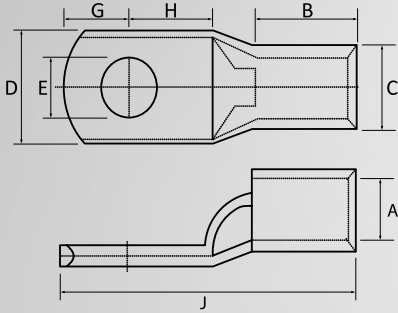
END PLATE



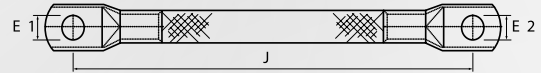
DROP-OUT PLATE



CRIMPING TYPE COPPER Tubular Cable Terminal Ends



TINNED COPPER FLEXIBLE BRAIDS Crimped with Connectors/ Terminals



HFT- crimped with lugs

Cable mm ²	Stud Hole	Dimensions (mm)						
		A	C	D	G	H	B	J
1.5	6.5	1.8	3.7	10	4	6	6	18
2.5	6.5	2.4	4	10	5	6	8	21
	8.4	2.4	4.2	12	6	9	8	26
4	6.5	3.1	4.8	10	5	6	8	21
	8.4	3.1	5.0	12	6	9	8	26
6	6.5	3.8	5.5	10	5	6	10	24
	8.4	3.8	5.5	12	6	9	10	28
10	6.5	4.5	6.2	11	6	7	10	26
	8.4	4.5	6.2	12	6	9	10	28
16	6.5	5.4	7.1	12	7	7	12	30
	8.4	5.4	7.1	12	7	7	12	30
20	8.4	6	7.7	12	7	7	12	32
25	6.5	6.8	8.8	13	7	7	12	30
	8.4	6.8	8.8	13	7	7	12	30

Size mm ²	Dimensions (mm)			Current rating AMP
	J	E1	E2	
4	50	6	6	50
	100	6	6	50
	150	6	6	50
	200	6	6	50
10	50	6	6	90
	100	6	6	90
	150	6	6	90
	200	6	6	90
16	100	8.5	8.5	125
	150	8.5	8.5	125
	200	8.5	8.5	125
	250	8.5	8.5	125
	300	8.5	8.5	125
25	100	10	10	160
	150	10	10	160
	200	10	10	160
	250	10	10	160
	300	10	10	160

CABLE TRAY COVER

Solid Cover

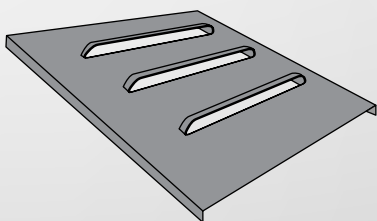


Functions : Cable tray covers shall be considered for any of the following purposes:

- Protection from falling objects or debris, as may occur beneath personnel walkways.
- Shielding from ultra-violet rays of the sun and guarding against other weathering elements.
- Minimizing accumulation of foreign contaminants such as ash or other industrial deposits.
- Protection of cables and personnel where a riser tray penetrates a floor or grating.

CABLE TRAY COVER

Ventilated Cover

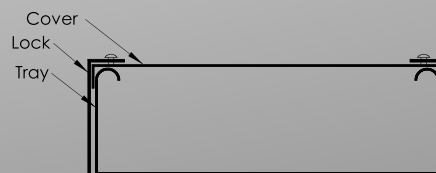
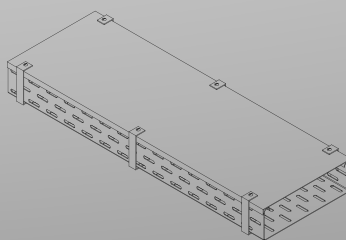
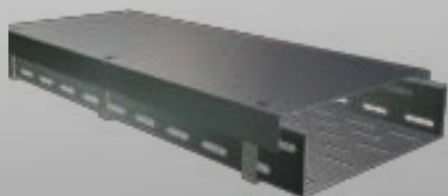


Covers Side Height Types :

- Solid without flange
- Solid with flange
- Ventilated without flange
- Ventilated with flange

CABLE TRAY COVER

With Locking Clamp



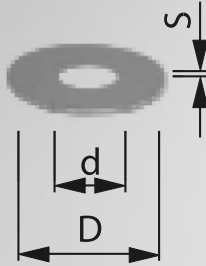
Locking Clamp
Thickness 2 mm

Covers Side Height Types :

- Solid without flange
- Solid with flange

ROUND WASHERS

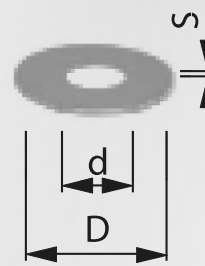
Washers (SRW) DIN 125



Zinc Plated	Stainless steel	D (mm)	d (mm)	s (mm)
M6	M6	12	6.4	1.6
M8	M8	16	8.4	1.6
M10	M10	21	10.5	2
M12	M12	24	13	2.5
M16	M16	30	17	3

ROUND WASHERS

Washers (SRW) DIN 440, DIN 9021



DIN	Zinc Plated	Stainless Steel	D (mm)	d (mm)	s (mm)
440	M6		22	6.6	2
9021	M8	M8	24	8.4	2
9021	M10	M10	30	10.5	2.5
440	M12		45	13.5	4
9021	M12	M12	37	13	3
9021	M16	M16	50	17	3

SQUARE WASHERS

Washers (SRW) DIN 125

For all Channels 41/21 Series



For all Channels 41/41 Series



H.D. Glvanized for Bolt	Stainless Steel for Bolt	a x b x d (mm)
M 6	M10	40 x 40 x (6-5-4)
M10	M12	40 x 40 x (6-5-4)
M12	M16	40 x 40 x (6-5-4)

FULLY THREADED RODS

Grade 4.6 DIN 975



Zinc Plated Thread	Length (mm)	Load cap. (KN)
M6	1000/2000	2.2
M8	1000/2000	4.0
M10	1000/2000	6.4
M12	1000/2000	12.9
M16	1000/2000	17.3

ROUND HEAD MACHINE SCREWS

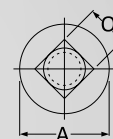
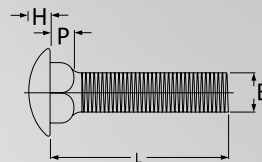
Round Head (SRH) DIN 7985



Zinc Plated Thread	Length (mm)	d (mm)
M6	40-30	6.0
M8	40-30	8.0
M10	60-20	10.0

CARRIAGE BOLTS

With Nut Below Head DIN 603



Zinc Plated Thread	Length (mm)	d (mm)
M6	40-30	6.0
M8	40-30	8.0
M10	60-20	10.0

ROOFING BOLTS

Roofing Bolts (SRB)

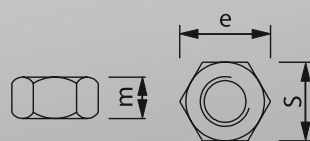
- Materials : low carbon steel , carbon steel
- Steel S235 , grade 4.6 , 4.8 and 8.8
- Surface : plain , black , zinc plated
- Length = X (mm) – Y (mm)



Thread Size	M4 x - y (mm)	M5 x - y (mm)	M6 x - y (mm)	M8 x - y (mm)
Length	50 - 10	80 - 10	120 - 12	150 - 16

HEXAGON NUTS

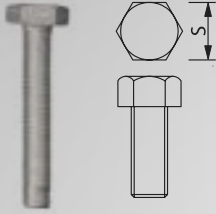
DIN 934, DIN 24032



Zinc Plated Thread	Stainless Steel Thread	S/m DIN (mm)	S/m ISO (mm)	e (mm)
M6	M6	5/10	6/10	11.5
M8	M8	6.5/13	7.5/13	15.0
M10	M10	8/17	9.5/16	19.6
M12	M12	10/19	12/18	21.9
M16	M16	13/24	15.5/24	27.7

MACHINE HEXHEAD BOLTS

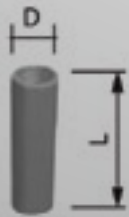
DIN 934, DIN EN 24032



Zinc Plated Dimension	Stainless Steel Dimension	S DIN (mm)	S EN (mm)
M 6 x 12		10	10
M 6 x 25			
M 8 x 25	M 8 x 25	13	13
M 8 x 40			
M 10 x 20		17	16
M 10 x 30	M 10 x 30		
M 10 x 45	M 10 x 45		
M 10 x 60			
M 10 x 70		19	18
M 12 x 22			
M 12 x 25	M 12 x 25		
M 12 x 30	M 12 x 30		
M 12 x 40	M 12 x 40		
M 12 x 50			
M 12 x 60	M 12 x 60		
M 12 x 80	M 12 x 80		
M 12 x 90		24	24
M 16 x 40	M 16 x 40		
M 16 x 60	M 16 x 60		
M 16 x 90	M 16 x 90		

COUPLER SLEEVES

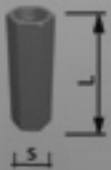
Rounded



Electroplated Thread	Stainless Steel Thread	D	L	Load cap. (KN)
		(mm)	(mm)	
M6	M6	10/10	15	2.2
M8	M8	14/12	20	4.0
M10	M10	16/13	25	6.4
M12	M12	20/16	30	9.3
M16	M16	25/21	40	17.3
M20	M20	32/26	50	27.0

HEXAGONAL ROD COUPLER

With view hole (SHR)



Electroplated Thread	Stainless Steel Thread	S	L	Load cap. (KN)
		(mm)	(mm)	
M10	M10	13	40	6.4
M12	M12	17	40	9.3
M16	M16	22	50	17.3

5

CABLE TRAY SUPPORT SYSTEM

*- C- Channel, Cantilever Arm, U-Support, I-Support,
Wall Bracket & Support Accessories*

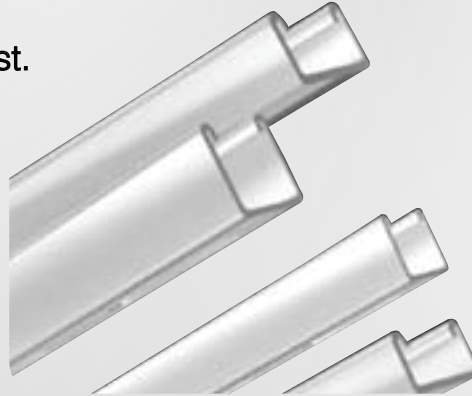
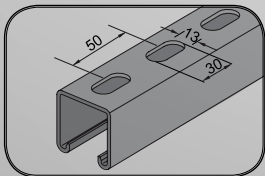
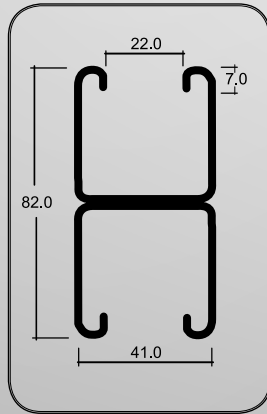
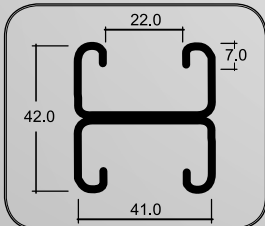
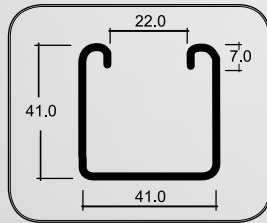
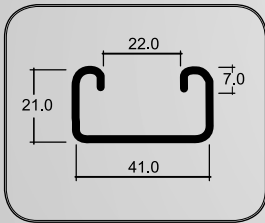
C-CHANNEL SYSTEMS

KIVOLT'S framing channel is cold formed on modern rolling machines from low carbon steel strips. Slot provides the ability to make attachments at any point.

Lengths

Standard length: 3000 mm.

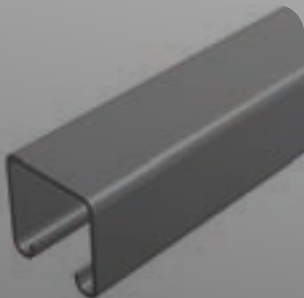
Custom lengths are available upon request.



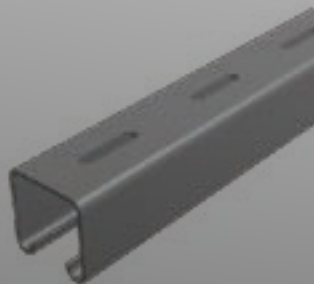
Channel Dimensions		Thickness
Height "H"	Width "W"	
21.0 mm	41.0 mm	1.2 mm
41.0 mm	41.0 mm	1.2 mm
21.0 mm	41.0 mm	1.5 mm
41.0 mm	41.0 mm	1.5 mm
21.0 mm	41.0 mm	2.0 mm
41.0 mm	41.0 mm	2.0 mm
21.0 mm	41.0 mm	2.5 mm
41.0 mm	41.0 mm	2.5 mm

CHANNEL HOLE PATTERNS

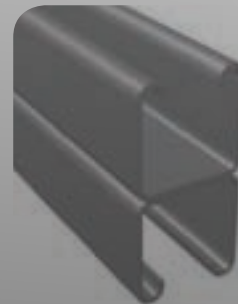
PLAIN TYPE



SLOTTED TYPE



BACK TO BACK TYPE

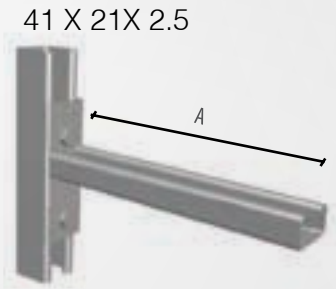


For more information on KIVOLTSystems , KIVOLT technical staff will be ready to assist you with all necessary details.

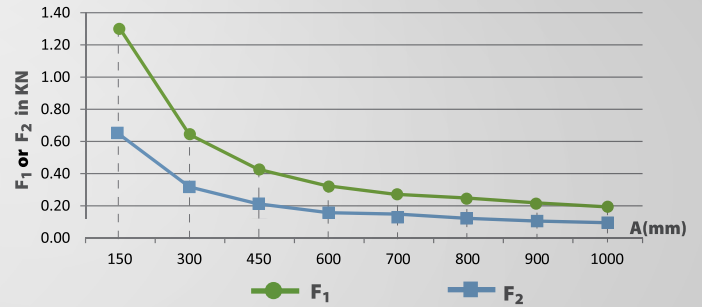
CANTILEVER ARM BRACKETS

Base plate : height (h) x width (b) x thickness (t) 110 50 8

- In the case of concrete support frame, use anchor M16 .
- In the case of concrete C-channel frame, use spring nut M12 .
- ** Connection force (pull-out force) : 5.13 (KN)

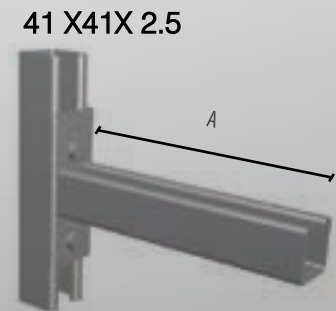


Length A (mm)	Allowable Load		
	F ₁ *	F ₂ *	F _z **
150	1.30	0.64	5.13
300	0.64	0.32	5.13
450	0.43	0.21	5.13
600	0.32	0.16	5.13
700	0.27	0.14	5.13
800	0.24	0.12	5.13
900	0.21	0.11	5.13
1000	0.19	0.10	5.13

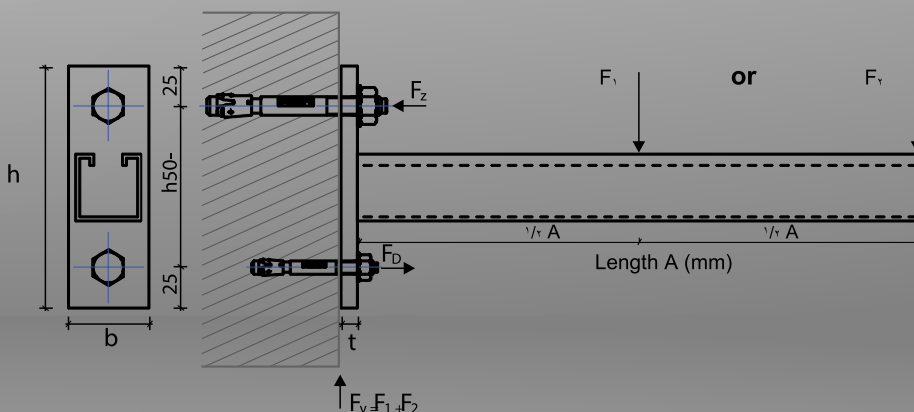
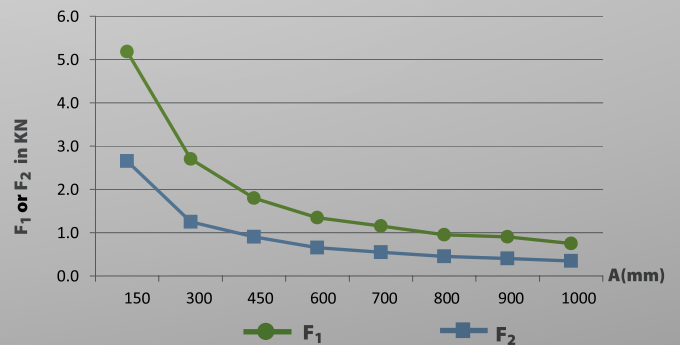


Base plate : height (h) x width (b) x thickness (t) 140 50 10

- In the case of concrete support frame, use anchor M20 .
- In the case of concrete C-channel frame, use spring nut M16 .
- ** Connection force (pull-out force) : 8.8 (KN)



Length A (mm)	Allowable Load		
	F ₁ *	F ₂ *	F _z **
150	5.18	2.65	8.8
300	2.70	1.25	8.8
450	1.80	0.90	8.8
600	1.35	0.65	8.8
700	1.15	0.55	8.8
800	0.95	0.45	8.8
900	0.90	0.40	8.8
1000	0.75	0.35	8.8



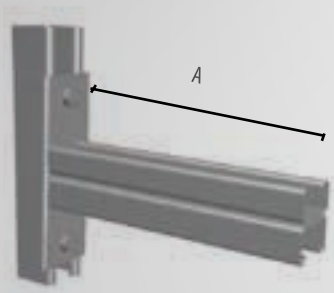
* Given Loads are always in [kN] " Allowable characteristic live load "

BACK TO BACK

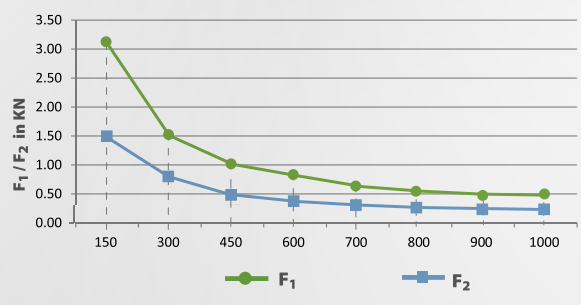
Base plate : height (h) x width (b) x thickness (t) 130 50 10

- In the case of concrete support frame, use anchor M12.
- In the case of concrete C-channel frame, use spring nut M8.
- ** Connection force (pull-out force) : 8.48 (KN)

41 X 21X 2.5



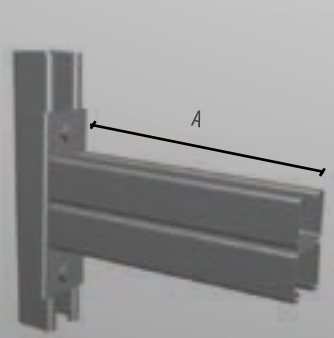
Length A (mm)	Allowable Load		
	F ₁ *	F ₂ *	F _z **
150	3.10	1.50	8.48
300	1.50	0.80	8.48
450	1.00	0.51	8.48
600	0.80	0.38	8.48
700	0.66	0.33	8.48
800	0.57	0.29	8.48
900	0.51	0.26	8.48
1000	0.46	0.23	8.48



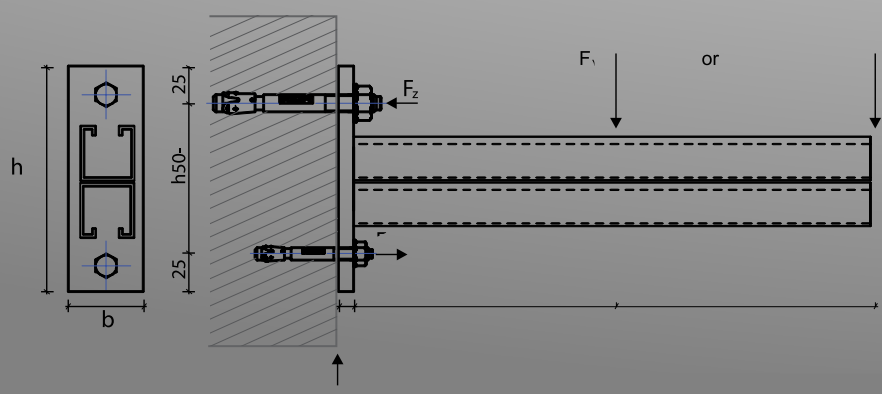
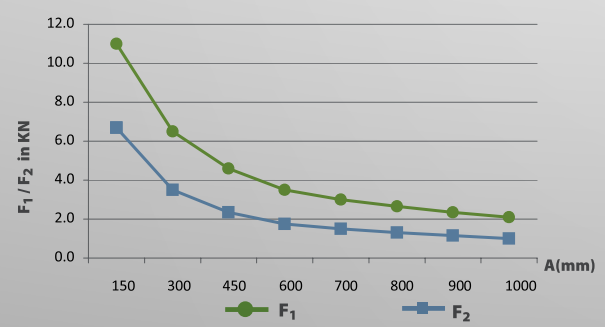
Base plate : height (h) x width (b) x thickness (t) 180 50 10

- In the case of concrete support frame, use anchor M16.
- In the case of concrete C-channel frame, use spring nut M12 .
- ** Connection force (pull-out force) : 14.7 (KN)

41 X 41X 2.5

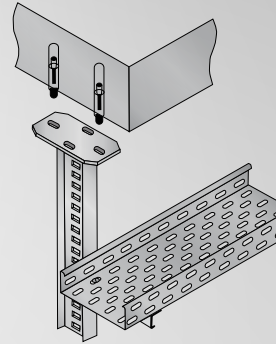
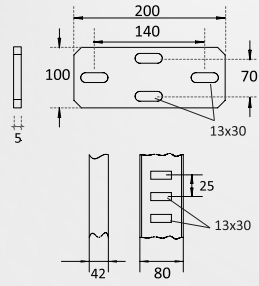
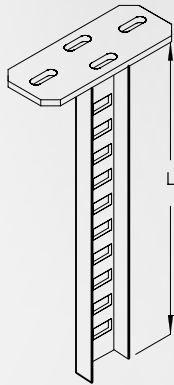


Length A (mm)	Allowable Load		
	F ₁ *	F ₂ *	F _z **
150	11.0	6.7	14.7
300	6.50	3.50	14.7
450	4.60	2.35	14.7
600	3.50	1.75	14.7
700	3.00	1.50	14.7
800	2.65	1.30	14.7
900	2.35	1.15	14.7
1000	2.10	1.00	14.7

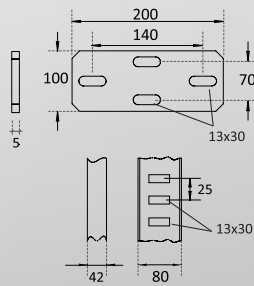
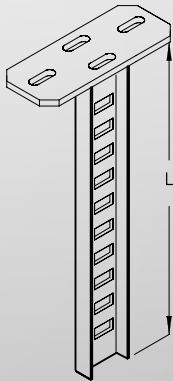


* Given Loads are always in [kN] " Allowable characteristic live load "

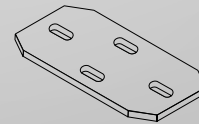
U-SUPPORT



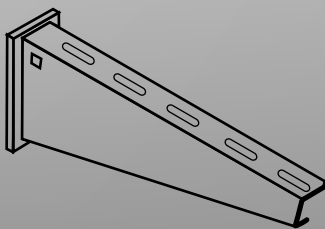
I-SUPPORT



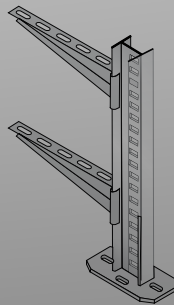
200 x 100 x 5mm



WALL BRACKET

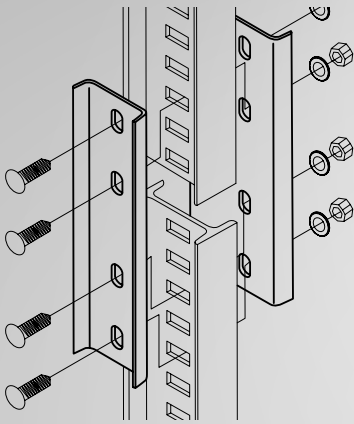


Thickness 5 mm

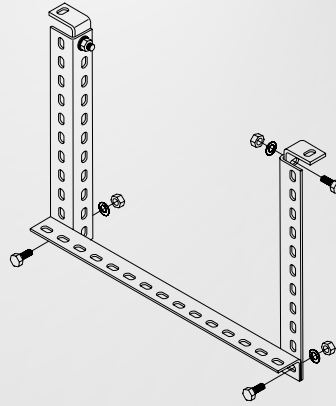


for I-Support

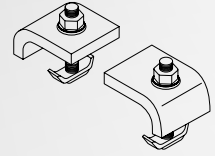
SUPPORT CONNECTORS



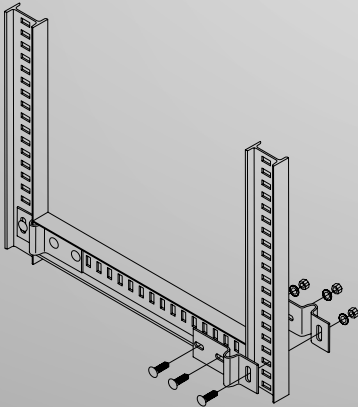
CLAMPING PLATES



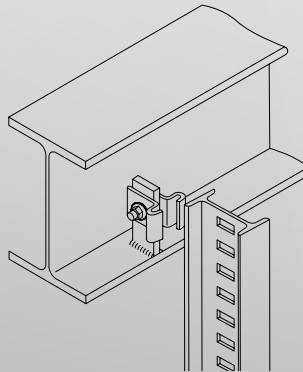
CLAMPING ANGLES



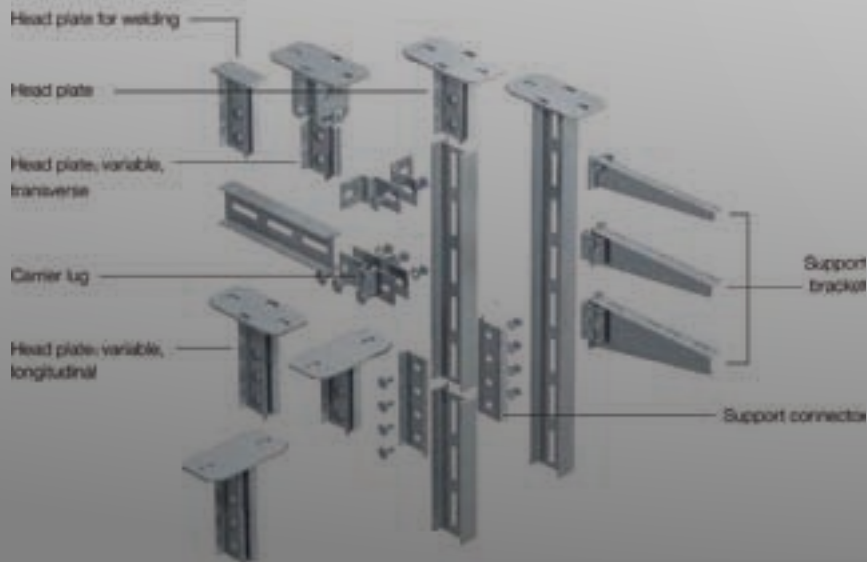
SUPPORT PLATES



SUPPORT CLAMPS



ANGLES



6

HEAVY DUTY ANCHORS

*- Expansion Steel Anchor, Drop-in-Anchor,
Sleeve Anchor, Throught Bolt (Wede Anchor)
& Shield Anchor*



HEAVY DUTY ANCHORS

General Information

DIRECTION OF LOADING

The direction of the applied load shall be considered to determine the most appropriate anchor. The tension and shear components shall be lesser than the recommended load/design resistance in the direction concerned.

TENSILE LOADS

Tensile loads are applied along the axis of fixing (see Fig.1). Common examples include suspended ceiling applications and the suspension of mechanical services, pipework, ductwork, etc ...

SHEAR LOADS

Shear loads act at right angles to the axis of fixing and directly against the face of the structural material (see Fig.2). Shear performance is governed mainly by the shear strength of the bolt material and by the compressive strength of the supporting substrate.

OBLIQUE / COMBINED LOADS'

Oblique loads are a combination of tension and shear components (see Fig.3). If the angle of the applied oblique load is within 10° of pure tension or pure shear, the safe working load for that direction may be assumed. Otherwise, the applied oblique load shall be resolved into its shear and tensile components.

OFFSET LOADS

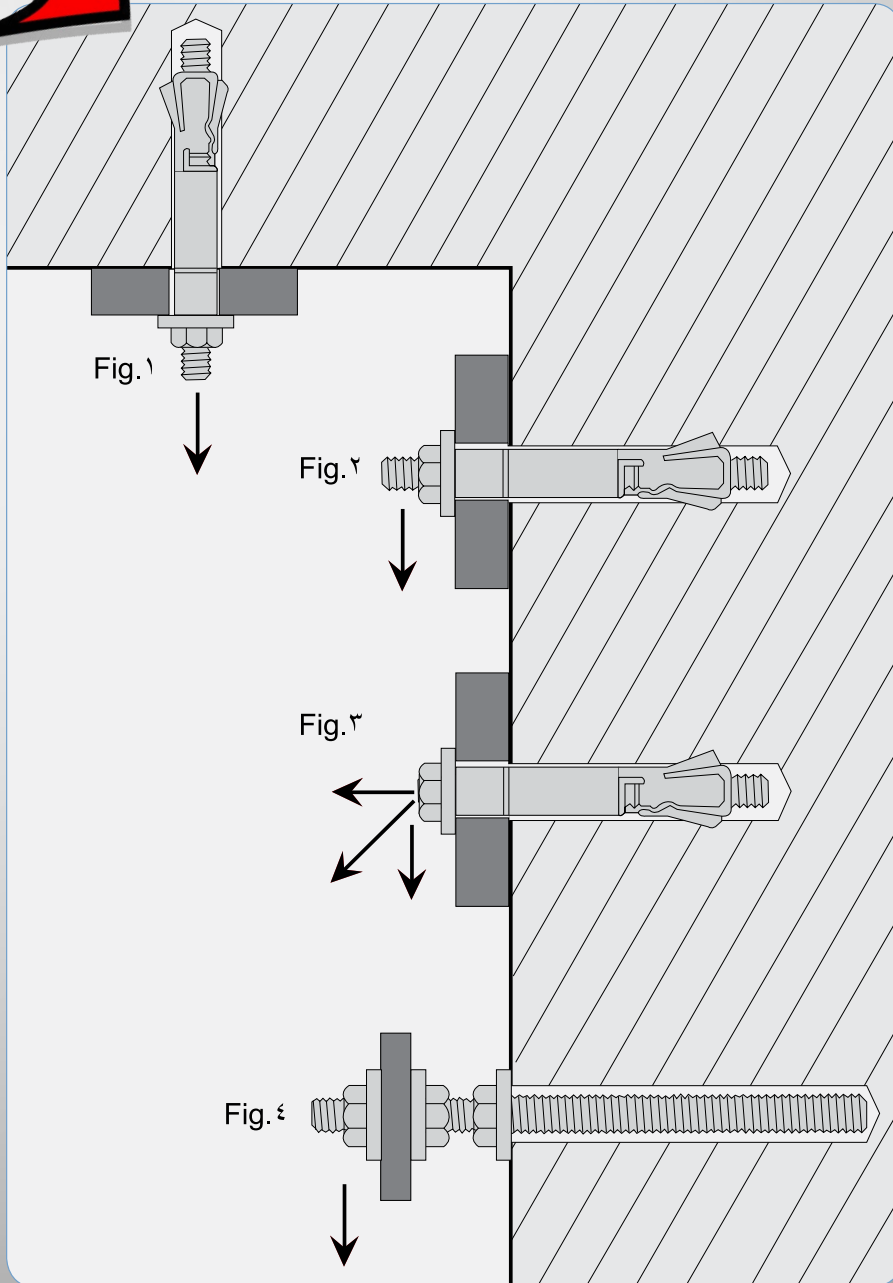
Offset loads act at right angles to the fixing axis but are offset from the surface (see Fig.4). In this situation, the deflection of the bolt due to bending needs to be considered as well as the shear capacity of the anchor.

SLOTTED HOLES IN FIXTURE

When fixing anchors through slotted holes; it is important to ensure that there is an adequate surface of contact between the washer and the fixture to guarantee a positive clamping force. If in doubt, a square plate washer with a thickness of 3mm or above would be recommended in place of the standard washer supplied.

DIAMOND DRILLED HOLES

When holes are formed in the structure using a diamond drilling system; extra care is required to ensure the holes are thoroughly cleaned by brushing and blowing for at least three times. Also, to make a key for the anchor (particularly if a bonded anchor is installed) the sides of the hole shall be roughened up by inserting a standard masonry bit into the hole attached to a hammer action drilling machine. A resin with minimal shrinkage shall be selected for diamond drilled holes.





EXPANSION STEEL ANCHOR



FEATURES:

- Suitable for all screws or threaded bolts with metric thread.
- Low energy impact, power-saving assembly.
- Multiple removing and fixing.
- Inside threaded anchor, allows great flexibility.
- Can use variable lengths and art of threaded rods or bolts.
- Small edge distance and small distance between anchors.
- Provide uniform load by tightening the screw or hexagon nut, the cone pulls into the expansion anchor and tightens against the drilled hole.
- Suitable for use in concrete and natural stone.

TYPICAL APPLICATIONS:

Cable trays, handrails, brackets, staircases, ladders, machines, window panels, base plates, scaffoldings & frameworks.

Materials:

- Zinc Plated Steel
- Stainless Steel [SS 304 (A2) , SS 316 (A4)].

Technical Data:

Recommended loads
(non-concreted C 20/25)

Type (order No)	Tension Load (KN)	Shear Load (KN)	Bending Moment (Nm)	Screw Grade
M6	2.5	2.3	3.9	8.8
M8	3.3	4.4	17	8.8
M10	4.7	6.5	34	8.8
M12	6.9	8.5	60	8.8

*for cracked Concrete we shall use 0,5 x this value (approximately)

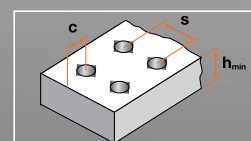
Setting Data:

Edge distance $> 1,5 \times H_{eff.}$,

Distance between anchors $> 3 \times H_{eff.}$

Thickness of foundation $> 2 \times H_{eff.}$

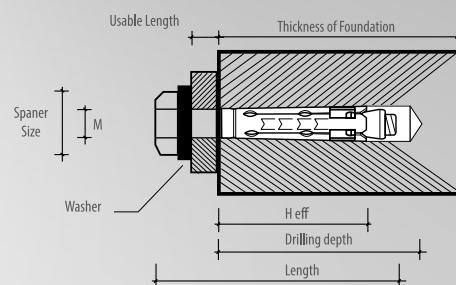
Size	$H_{eff.}$ (mm)	Edge Distance C (mm)	Distance Between Anchors S (mm)	Thickness of Foundation h_{min} (mm)	Washer (Ø)	Tightening Torque (Nm)	Spanner size (mm)
M6	40	60	120	100	12 x 1.6	10	10
M8	45	68	135	100	16 x 1.6	20	13
M10	55	83	165	110	20 x 2.0	40	17
M12	70	105	210	140	24 x 2.5	75	19



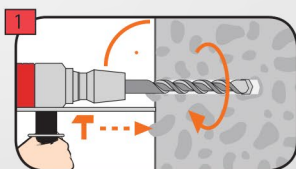
Installing Parameters:

H_{eff} = Effective anchorage depth.

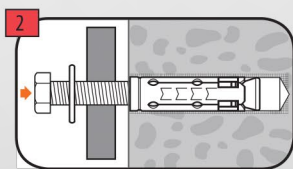
Bolt Size	Length exp.unit (mm)	Drill (Ø) (mm)	Drilling depth (mm)	H_{eff} (mm)	Usable Length (mm)	Screw Ø x Length (mm)
M6	45	10	55	40	5	M6 x 50
M8	50	12	60	45	10	M8 x 60
M10	60	15	80	55	20	M10 x 80
M12	75	18	90	70	25	M12 x 90



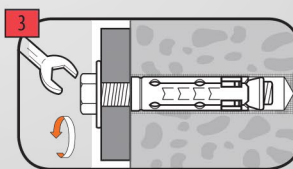
INSTALLATION



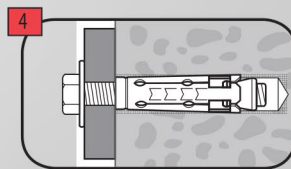
1 Drill a hole and clean it with a brush, remove dust with a



2 Place the plug and the object to fix.



3 Tighten the screw.



4 Fixing completed.



DROP -IN- ANCHOR

FEATURES:

- Provides permanently fixed threaded socket in concrete.
- Use in non-cracked concrete or cracked concrete and natural stone.
- The anchor will spread and tighten against the drilled hole after inserting with setting tool.
- Low setting depth, reduced drilling time.
- Enables cost-effective assembly .
- Multiple removing and fixing.

TYPICAL APPLICATIONS:

Pipes, ventilation ducts, suspended ceilings, sprinkler systems, brackets, threaded rods and cable trays.

Materials:

- Zinc plated steel.
- Stainless steel [SS 304 (A2) , SS 316 (A4)]

Technical Data:**Recommended loads
(non-concreted C 20/25)**

Threaded size	Tension Load (KN)	Shear Load (KN)	Bending Moment (Nm)
M6	2.4	1.9	3.8
M8	3.2	2.3	9.4
M10	4.9	2.8	16.3
M12	7.3	5.3	32.7
M16	9.8	8.4	75

*for cracked Concrete we shall use 0,5 x this value (approximately)

Setting Data:

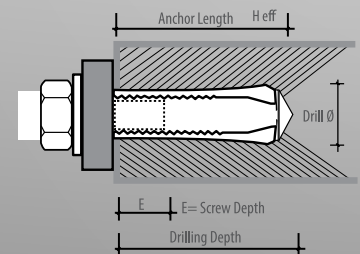
Edge distance $> 1.5 \times$ effective anchorage depth,
Distance between anchors $> 3,0 \times$ effective anchorage dept
min. Thickness of foundation $> 2 \times H_{eff}$.

Size	H_{eff} (mm)	Edge Distance C (mm)	Distance Between Anchors S (mm)	Thickness of Foundation h_{min} (mm)	Tightening Torque (Nm)	Spanner size
M6	25	37.5	75	100	4	10
M8	30	45	90	100	9	13
M10	40	60	120	130	17	17
M12	50	75	150	140	30	19
M16	65	197.5	195	160	75	24

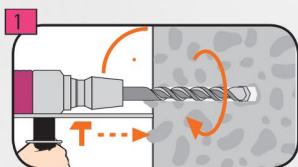
Installing Parameters:

H_{eff} = Effective anchorage depth.

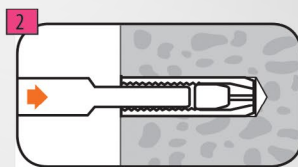
Thread Size	Anchor Length (mm)	Thread Length (mm)	Drill (\emptyset) (mm)	Drilling Depth (mm)	Effective Anchorage Depth H_{eff} (mm)	Min. Screw Depth E (mm)	Max.Screw Depth E (mm)
M6	25	11	8	25	25	6	12
M8	30	13	10	30	30	8	13
M10	40	15	12	40	40	10	17
M12	50	20	16	50	50	12	18
M16	65	25	20	65	65	16	23



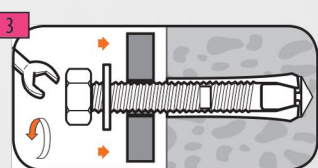
INSTALLATION



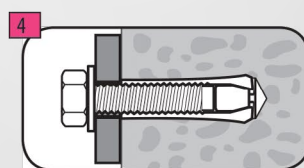
1 Drill a hole and clean it with a brush, remove dust with a blower.



2 Insert the anchor sleeve in the hole.




3 Tighten to the recommended torque.

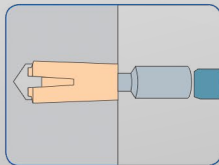


4 Fixing completed.


Manual Setting Tool



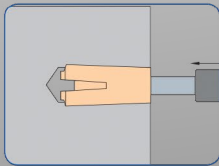
Use the setting tool to drive the internal wedge into the anchor.



Mechanical Setting Tool



Alternatively use the mechanical setting tool with an appropriate drilling machine.





SLEEVE ANCHOR



FEATURES:

- Suitable for use in concrete, natural stone, brickwork and block work
- small distance between anchors.
- Optimum performance in most base material types.
- No protruding threads after installation.
- Small distance between anchors and from edge.
- Controlled expansion.
- Zinc plated $> 5\mu\text{m}$.
- Effective force distribution in the drilled hole.
- Sleeve anchor with hexagon screw or with threaded bolt.

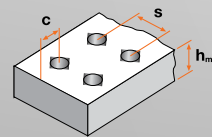
TYPICAL APPLICATIONS:

Railings, steel constructions , machines, high-racks, cable support systems and mechanical fixations.

Technical Data:

Recommended loads
(non-concreted C 20/25)

Bolt Size	Tension Load (KN)	Shear Load (KN)	Bending Moment (Nm)
M6	2.56	2.0	5.0
M8	3.33	3.3	12.5
M10	4.1	5.0	25.5
M12	6.66	7.5



*for cracked Concrete we shall use 0,5 x this value (approximately)

Setting Data:

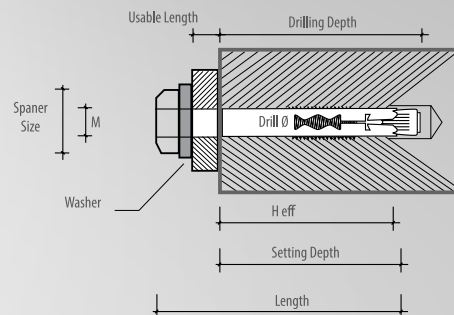
Edge distance $> 1.5 \times$ effective anchorage depth,
Distance between anchors $> 3,0 \times$ effective anchorage depth,
min. Thickness of Foundation $> 2,5 \times H \text{ eff.}$

Bolt Size	H eff . (mm)	Edge Distance C (mm)	Distance Between Anchors S (mm)	Thickness of Foundation h _{min} (mm)	Washer (Ø) (mm)	Tightening Torque (Nm)	Spanner size
M6	35	52.5	105	70	18 x 1.6	8	10
M8	40	60	120	80	16 x 1.6	25	13
M10	50	75	150	100	20 x 2.0	40	17
M12	75	112.5	225	150	26 x 2.0	50	19

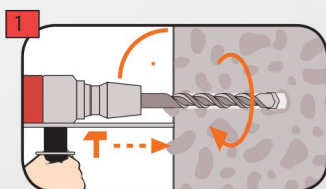
Sleeve Anchor with Hexagon Screw (non-cracked concrete C20/25)

Size	Length (mm)	Drill (Ø) (mm)	Hole Ø in Fixture (mm)	Drilling Depth (mm)	Setting Depth (Ø)	H eff. (mm)	Min.Usable Length (mm)
M6	45	8	10	55	35	35	5
M6	60	8	10	55	35	35	15
M8	60	10	12	60	40	40	15
M8	80	10	12	60	40	40	25
M10	70	12	14	70	50	50	15
M10	100	12	14	70	60	50	35

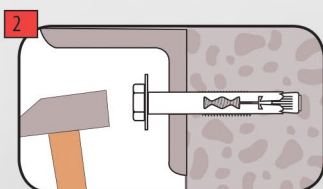
*for cracked Concrete we shall use 0,5 x this value (approximately).



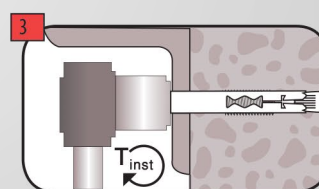
INSTALLATION



1 Drill a hole and clean it with a brush, remove dust with a blower



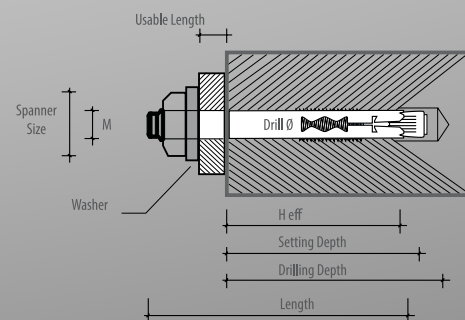
2 Insert the sleeve anchor through the fixture into the hole.



3 Tighten to the recommended torque.

Sleeve Anchor with Threaded Bolt & Nut

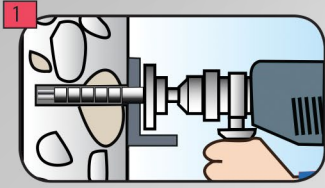
Size	Length (mm)	Drill (Ø) (mm)	Hole Ø in Fixture (mm)	Min.Drilling Depth (mm)	Min. Setting Depth (Ø)	H eff. (mm)	Max. Usable Length (mm)
M6	49	8	10	29	27	25	20
M6	64	8	10	29	27	25	35
M8	60	10	12	34	32	30	25
M8	75	10	12	34	32	30	40
M8	105	10	12	34	32	30	70
M8	85	10	12	34	32	30	50
M10	73	12	14	44	42	40	25
M10	88	12	14	44	42	40	40
M10	108	12	14	44	42	40	60
M10	138	12	14	44	42	40	90
M12	100	16	18	64	62	60	30
M12	120	16	18	64	62	60	50
M16	165	20	22	84	82	80	70



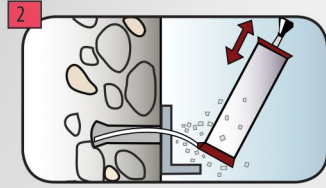


INSTALLATION

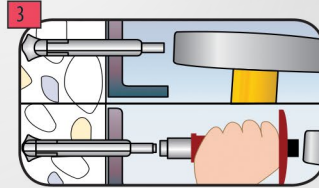
Push-Through Installation



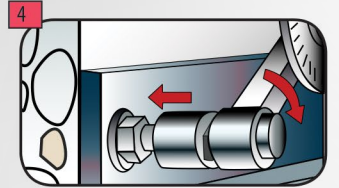
1 Place the fixture (object) and drill a hole.



2 Remove dust with a blower and clean the hole with a brush.



3 Tap the anchor through the fixture with a hammer or a setting tool.

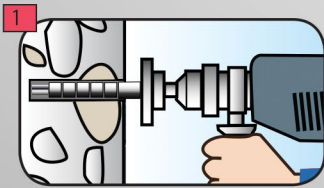


4 Tighten to the recommended torque.

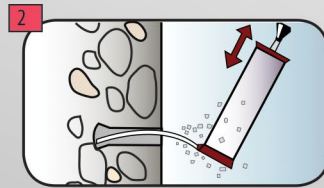


INSTALLATION

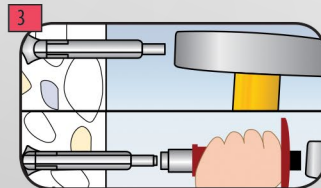
Pre-Positioned Installation



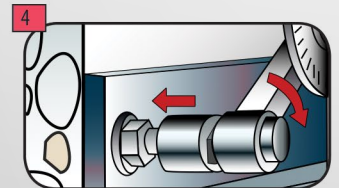
1 Drill a hole of requested diameter and depth.



2 Remove dust with a blower and clean the hole with a brush.



3 Tap with a hammer or a setting tool until fixing depth



4 Tighten to the recommended torque.



THROUGHT BOLT

Wedge Anchor



FEATURES:

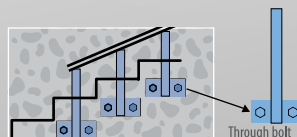
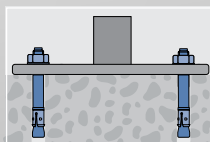
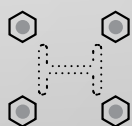
- Suitable for use in cracked concrete or in non-cracked concrete and in natural stone.
- Special design of the clip in stainless steel which ensures a safe hold in the hole.
- Torque controlled expansion.
- Zinc plated $> 5\mu\text{m}$.
- User friendly, face fixing or through fixing.

TYPICAL APPLICATIONS:

Hand rails, steel constructions, cable trays, supports, brackets, ducts and shelf feet.

Materials:

- Zinc plated steel.
- Stainless steel [SS 304 (A2) , SS 316 (A4)].

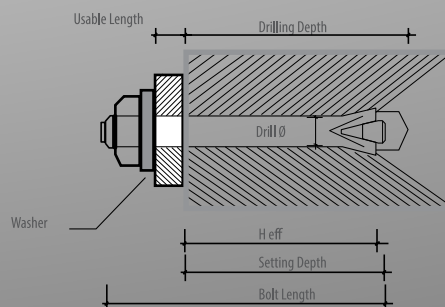


Technical Data:

Through bolt zinc plated
(non-cracked C20/25)

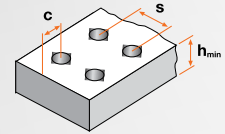
Bolt Size	Tension Load (KN)	Shear Load (KN)	Bending Moment (Nm)
M6	2.1	3.0	5.5
M8	4.0	4.8	13.0
M10	5.5	8.5	26.5
M12	7.5	9.5	46.5
M16	13.0	16.0	118.5

*for cracked Concrete we shall use 0,5 x this value (approximately)



Setting Data:Edge distance $> 1,5 H_{eff}$,Distance between anchors $> 3 \times H_{eff}$.Thickness of foundation $> 2 \times H_{eff}$.

Bolt Size	H_{eff} (mm)	Edge Distance C (mm)	Distance Between Anchors S (mm)	Washer (Ø)	Thickness of Foundation h_{min} (mm)	Tightening Torque (Nm)	Spanner Size
M6	40	60	120	12 x 1.6	100	7	10
M8	50	75	150	16 x 1.6	100	14	13
M10	58	87	174	20 x 2.0	120	30	17
M12	68	102	204	24 x 2.5	140	35	19
M16	80	120	240	30 x 3.0	160	80	24

**Installing Parameters**

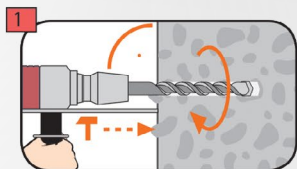
Through bot zinc plated, stainless steel or hot-dip galvanized.

Bolt Size	Bolt Length (mm)	Drill Ø (mm)	Hole Ø in Fixture (mm)	Drilling Depth (mm)	Setting Depth (mm)	H_{eff} (mm)	Usable Length Fix (mm)
M6	40	6	6.5	35	27	3
	55	6	6.5	35	35	35	15
	70	6	6.5	35	35	35	30
	95	6	6.5	35	35	35	55
M8	50	8	9	35	35	10
	65	8	9	40	40	20
	80	8	9	40	40	40	35
	95	8	9	40	40	40	50
	105	8	9	40	40	40	60
M10	65	10	11	40	40	40	15
	80	10	11	50	50	50	20
	95	10	11	50	50	50	35
	115	10	11	50	50	50	55
	120	10	11	50	50	50	60
M12	80	12	13	65	50	50	20
	100	12	13	65	60	60	30
	120	12	13	65	60	60	50
	135	12	13	65	60	60	65
M16	105	16	18	85	70	70	15
	140	16	18	85	80	80	40
	180	16	18	85	80	80	80
	220	16	18	85	80	80	120

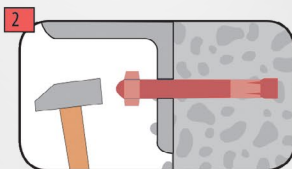
 H_{eff} := Effective anchorage depth

INSTALLATION

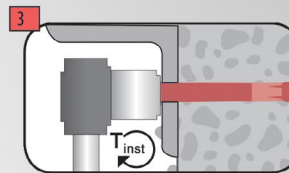
Push-Through Installation



Drill a hole and clean with a brush, remove dust with a blower.



Place the fixture and insert the through bolt with a hammer.



Tighten to the recommended torque.



SHIELD ANCHOR

FEATURES:

- Assembly detachable, multiple removing and fixing.
- Low energy impact, power-saving assembly.
- Force controlled expansion.
- Flexibility inside threaded anchor.
- Variable length and art of threaded rods or bolts.
- By tightening the screw, the cone pulls into the sleeve and tense against the drill hole.
- Small edge distance and small distance between anchor.
- Expansion elements are held together by a spring.
- Optimum taper nut angle for maximum expansion.
- Pressed steel segment ensures consistent dimensional accuracy.
- Provide a projecting stud to support fixture during installation and removal.
- Suitable for use in concrete, natural stone, Brick and sand stone.

TYPICAL APPLICATIONS:

For fixing : steel constructions, handrails, consoles, brackets, ladders, gates and spacing designs.

Materials:

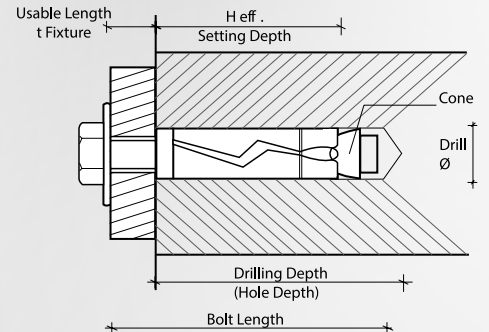
- Zinc plated and die-cast.

Technical Data:

Recommended loads
(concrete C 20/25 and in
brick work).

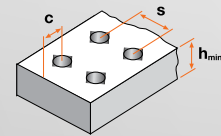
Size	Concrete		Brick Work Tension Shear KN	Torque Concrete N.m	Torque Brick N.m
	Tension KN	Shear KN			
M6	3.3	2.1	1.6	6.5	5.0
M8	4.8	4.4	2.1	15.0	7.5
M10	6.2	6.1	2.6	27.0	13.0
M12	9.7	12.4	3.9	50.0	23.0

*for cracked Concrete we shall use 0,5 x this value (approximately)

**Setting Data:**

Edge distance $> 1,5 \times H \text{ eff.}$,
Distance between anchors $> 3 \times H \text{ eff.}$
Thickness of foundation $> 2 \times H \text{ eff.}$

Size	Distance to Edge C (mm)	Distance Between Anchors S (mm)	Min. Thickness of Foundation h_{\min} (mm)	H eff. (mm)
M6	52.5	105	70	35
M8	60	120	80	40
M10	75	150	100	50
M12	90	180	120	60

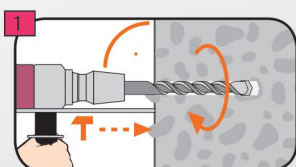
**INSTALLING PARAMETERS**

A- Using a hexagon screw: insert shield only, place the fixture over the hole and insert a hexagon screw with a washer through the fixture.

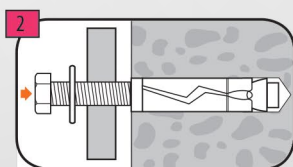
B- Using a threaded bolt and nut: insert the shield with a threaded bolt, position the fixture over the thread and add a washer with a nut.

A. Shield Anchor with hexagon screw

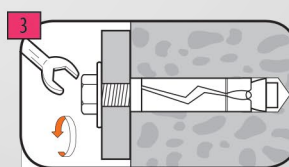
Size	Bolt Length (mm)	Min. Drill Ø (mm)	Shield Length (mm)	Min. Hole Depth (mm)	Setting Depth H eff .	Usable Length (mm)	Spanner Size (mm)
M6	55	12	45	50	35	10	10
	70					25	
	85					40	
M8	65	14	50	55	40	10	13
	80					25	
	95					40	
M10	75	16	60	65	50	10	17
	90					25	
	115					50	
M12	90	20	75	85	60	10	19
	105					25	
	120					40	



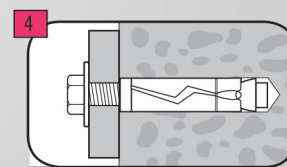
Drill a hole and clean it with a brush, remove dust with a blower.



Place the plug and the object to fix.



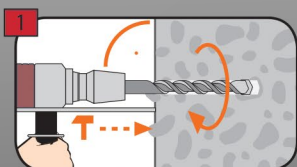
Tighten the screw.



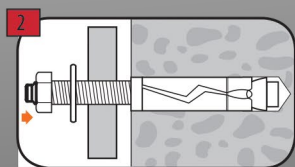
Fixing completed.

B. Shield Anchor with threaded bolt & nut

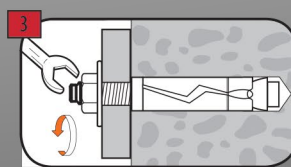
Size	Threaded Length (mm)	Min. Drill Ø (mm)	Shield Length (mm)	Min. Hole Dep (mm)	Setting Depth H eff .	Usable Length (mm)	Spanner Size (mm)
M6	65	12	45	50	35	10	10
	80					25	
	115					60	
M8	75	14	50	55	40	10	13
	90					25	
	115					50	
	125					60	
M10	90	16	60	65	50	15	17
	105					30	
	135					60	
M12	110	20	75	85	60	15	19
	125					30	
	170					75	



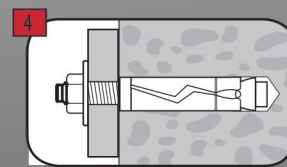
Drill a hole and clean it with a brush, remove dust with a blower.



Place the plug and the object to fix.




Tighten the screw.



Fixing completed.

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