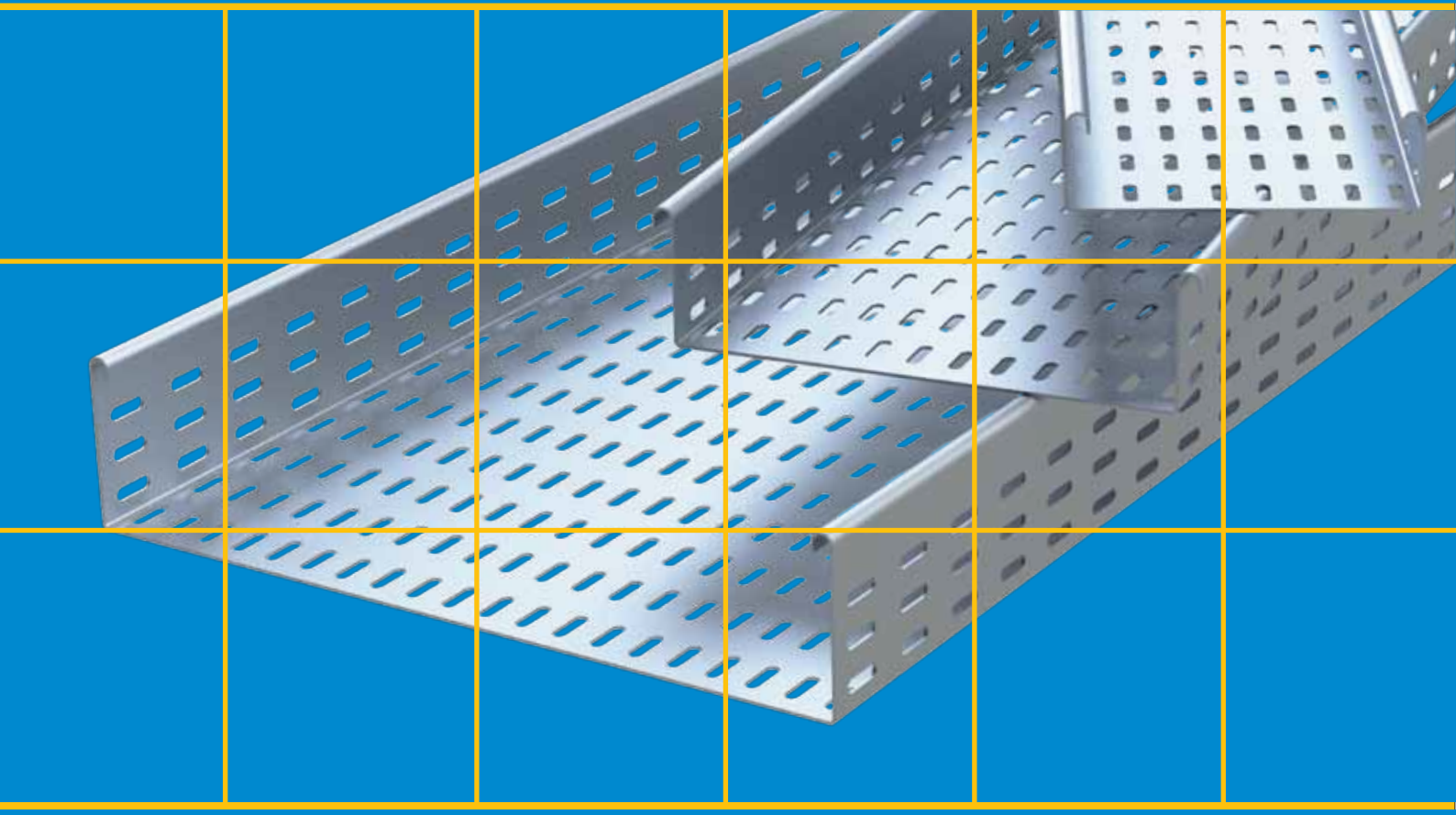
Power Solution Industries

DESIGN, ENGINEERING & MANUFACTURING COMPANY



PRODUCT CATALOGUE

BSI KITEMARK

ISO 9001 14001 45001 CERTIFIED

CABLE TRAY SYSTEMS

CONTENTS

EDITION 2023

Engineered to Excellence

BSI
KITEMARK

BSI KITEMARK CERTIFIED PRODUCTS

1ST CABLE MANAGEMENT MANUFACTURING COMPANY IN MIDDLE EAST AND AFRICA

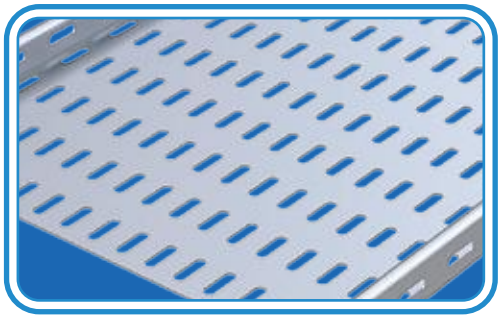
Power Solution Industries quality plan conforms comprehensivily to ISO 9001:2015, ISO 45001: 2018, ISO14001: 2015. The quality assessment and reviews are carried out by DET NORSKE VERITAS. The organization defines its quality objectives at the various levels of the company in order to achieve continual improvement in quality management system.

CABLE TRAY SYSTEMS - OVERVIEW

MEDIUM DUTY INSIDE RETURN FLANGE CABLE TRAY

MD - Cable Trays are produced with inside return flanges to provide strength to the component and better load bearing capacity.

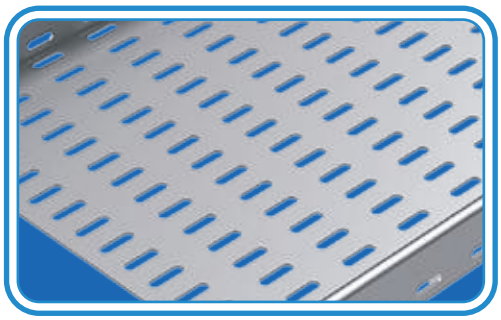
SIDE HEIGHT: 25 mm



HEAVY DUTY INSIDE RETURN FLANGE CABLE TRAY

HD - Cable Trays are produced with inside return flanges with larger depth for better cable management and increased load bearing capacity.

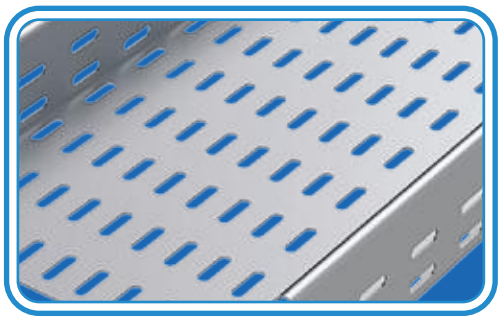
SIDE HEIGHT: 50 mm



EXTRA HEAVY DUTY INSIDE RETURN FLANGE CABLE TRAY

XD - Cable Trays are produced with inside return flanges for extra heavy duty applications and extra load bearing capacity.

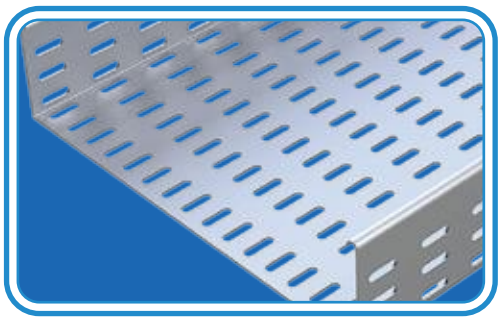
SIDE HEIGHT: 75 mm



DOUBLE EXTRA HEAVY DUTY INSIDE RETURN FLANGE CABLE TRAY

XXD - Cable Trays are produced with inside return flanges for Double extra heavy duty applications and High load bearing capacity.

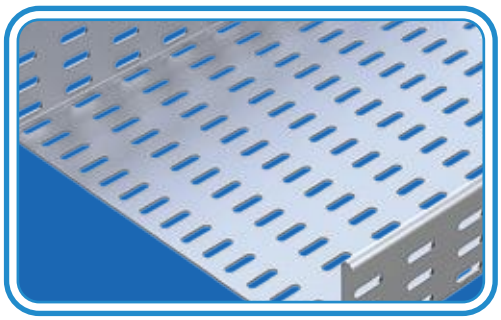
SIDE HEIGHT: 100 mm



OUTSIDE RETURN FLANGE CABLE TRAY

Outside Return Flange Cable Trays are produced with flanges returning towards outside of the tray. These tray systems are produced for Medium, Heavy, Extra Heavy and Double Extra Heavy Duty applications.

SIDE HEIGHT: 25, 50, 75, 100 mm



★ ***Custom designed Cable Tray Systems can be manufactured on request.***

MEDIUM DUTY CABLE TRAY SYSTEMS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

EXAMPLE: For 600 mm wide Cable Tray

MEDIUM DUTY CABLE TRAY

MD / COMPONENT / WIDTH / THK / FINISH
MD / CTI / 600 / 2 / HDG *(CTO for Outside Return Flange)*

EXAMPLE: For 600 mm wide Elbow Horizontal 90 ^{0}

MEDIUM DUTY CABLE TRAY FITTINGS

MD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH
MD / CTI / EH / 600 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461:2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

FOR STRAIGHT LENGTHS AND FITTINGS

Width (W)	Thickness (THK)
All dimensions are in mm	
50 to 150	0.8 / 0.9 / 1.0 / 1.2 / 1.5 / 2.0 / 2.5
225 to 300	1.2 / 1.5 / 2.0 / 2.5
450 to 600	1.5 / 2.0 / 2.5
750 to 900	2.0 / 2.5

PSI - Medium Duty Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Medium Duty Inside / Outside Return Flange Cable Tray fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the trays & fittings above 300 mm widths for better load bearing capacity.

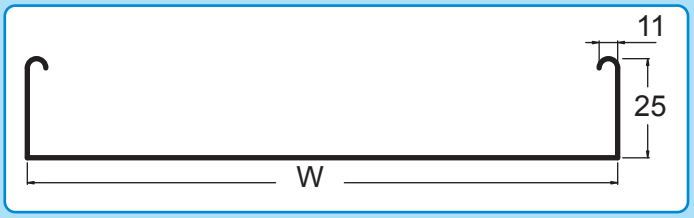
STRAIGHT / ANGLE / FLANGE CONNECTOR

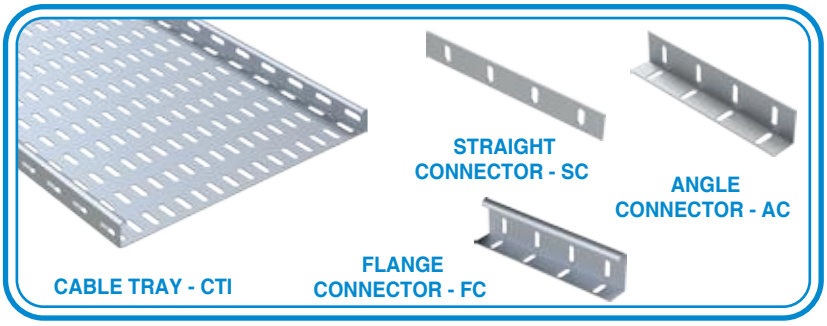
For Component Width (mm)	Thickness (THK) (mm)
50 to 900	1.2 - 2.5

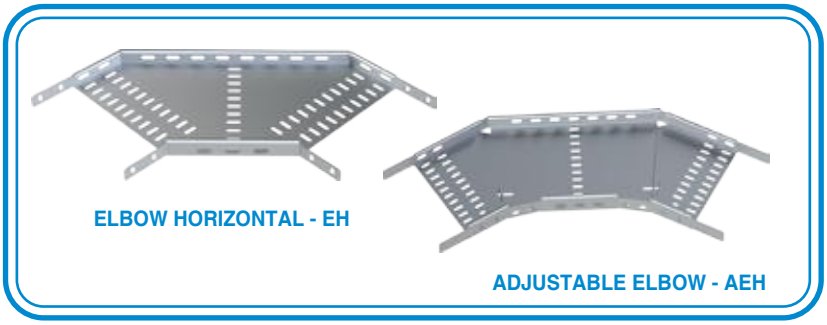
- ★ Select an appropriate connector to suit your requirements
- ★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

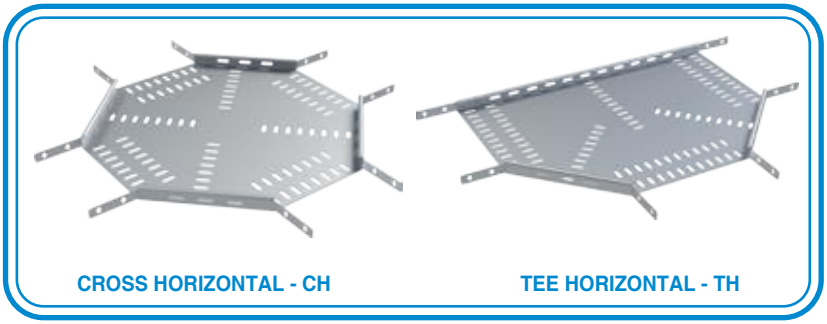
MD / CTI / SC / THK / FINISH
CTO for Outside Return Flange

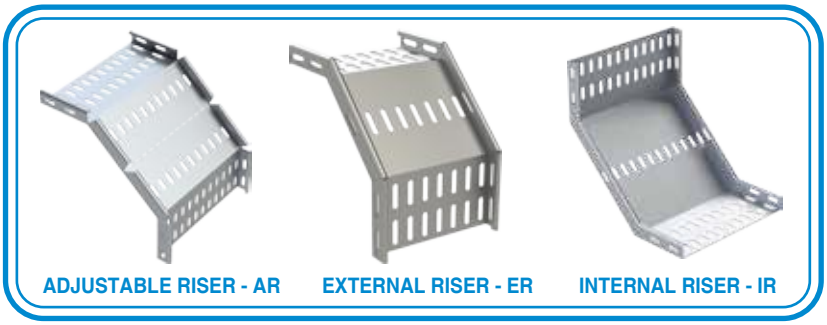
MEDIUM DUTY INSIDE RETURN FLANGE

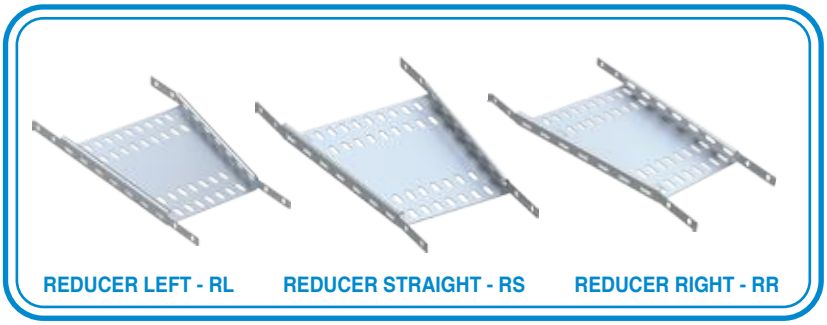




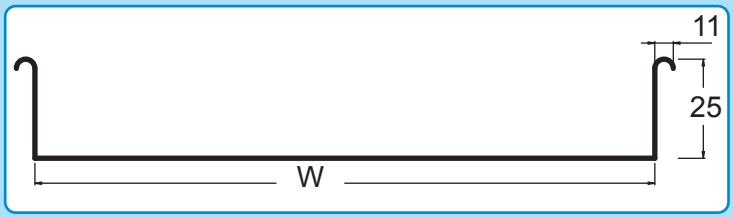


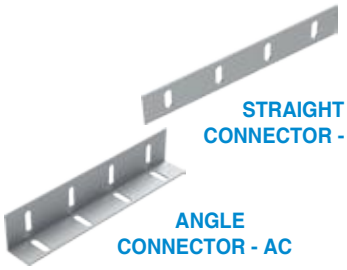






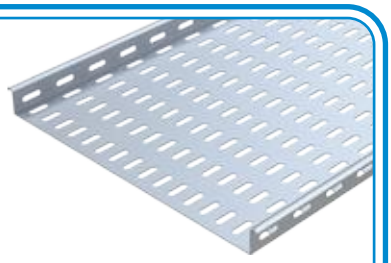
MEDIUM DUTY OUTSIDE RETURN FLANGE





STRAIGHT CONNECTOR - SC

ANGLE CONNECTOR - AC



CABLE TRAY - CTO

ELBOW HORIZONTAL - EH

ADJUSTABLE ELBOW - AEH

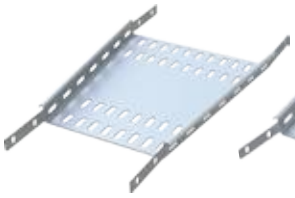
CROSS HORIZONTAL - CH

TEE HORIZONTAL - TH

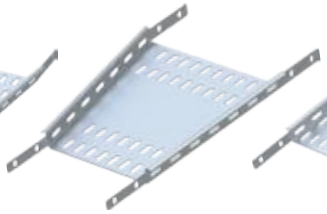
ADJUSTABLE RISER - AR

EXTERNAL RISER - ER

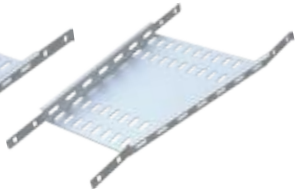
INTERNAL RISER - IR



REDUCER LEFT - RL



REDUCER STRAIGHT - RS



REDUCER RIGHT - RR

For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

MD / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

MD / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

MD / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH

CTO for Outside Return Flange

Extra long Adjustable Riser can also be produced on request as Internal or External Riser.

MD / CTI / XLAR / WIDTH / THK / FINISH

CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

MD / CTI / REDUCER / WIDTH / THK / FINISH

CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the Fitting.

Reducer Right can be used where cable trays have the limitation of run on the left hand side

Reducer Left can be used where cable trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

MD / CTI / FC / THK / FINISH

HEAVY DUTY CABLE TRAY SYSTEMS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

EXAMPLE: For 600 mm wide Cable Tray

HEAVY DUTY CABLE TRAY

HD / COMPONENT / WIDTH / THK / FINISH
HD / CTI / 600 / 2 / HDG ***(CTO for Outside Return Flange)***

EXAMPLE: For 600 mm wide Elbow Horizontal 90 ^{0}

HEAVY DUTY CABLE TRAY FITTINGS

HD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH
HD / CTI / EH / 600 / 90 / 300 / 2 / HDG ***(CTO for Outside Return Flange)***

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

FOR STRAIGHT LENGTHS AND FITTINGS

Width (W)	Thickness (THK)
All dimensions are in mm	
50 to 150	0.8 / 0.9 / 1.0 / 1.2 / 1.5 / 2.0 / 2.5
225 to 300	1.2 / 1.5 / 2.0 / 2.5
450 to 600	1.5 / 2.0 / 2.5
750 to 900	2.0 / 2.5

PSI - Heavy Duty Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Heavy Duty Inside / Outside Return Flange Cable Tray Fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the Trays & Fittings above 300 mm widths for better load bearing capacity.

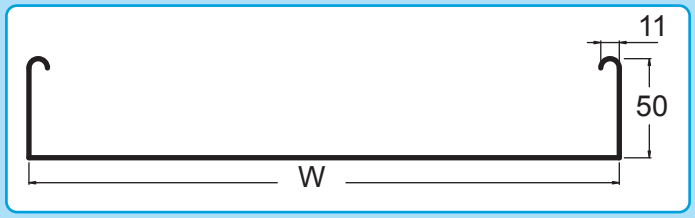
STRAIGHT / ANGLE / FLANGE CONNECTOR

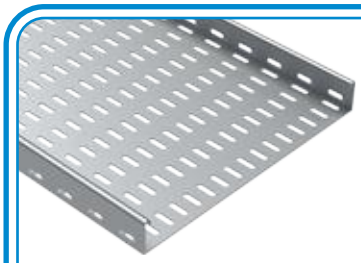
For Component Width (mm)	Thickness (THK) (mm)
50 to 900	1.2 - 2.5

- ★ Select an appropriate connector to suit your requirements
- ★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

HD / CTI / SC / THK / FINISH
CTO for Outside Return Flange

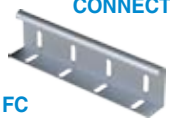
HEAVY DUTY INSIDE RETURN FLANGE




CABLE TRAY - CTI


STRAIGHT CONNECTOR - SC


ANGLE CONNECTOR - AC


FLANGE CONNECTOR - FC


ELBOW HORIZONTAL - EH


ADJUSTABLE ELBOW - AEH

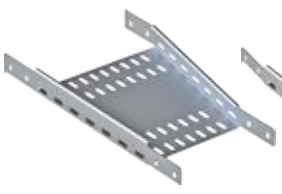

CROSS HORIZONTAL - CH

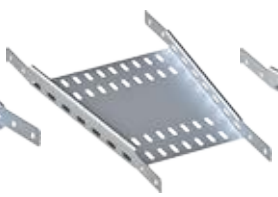

TEE HORIZONTAL - TH

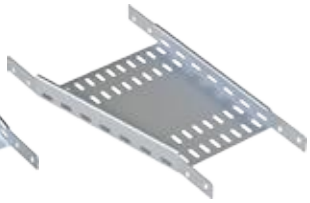

ADJUSTABLE RISER - AR


EXTERNAL RISER - ER

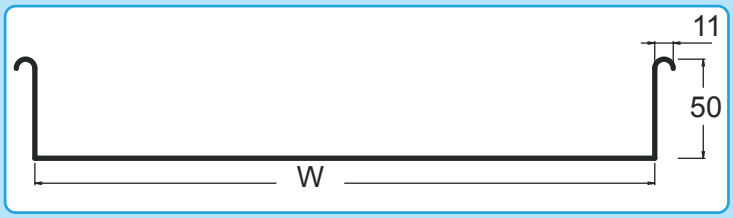

INTERNAL RISER - IR

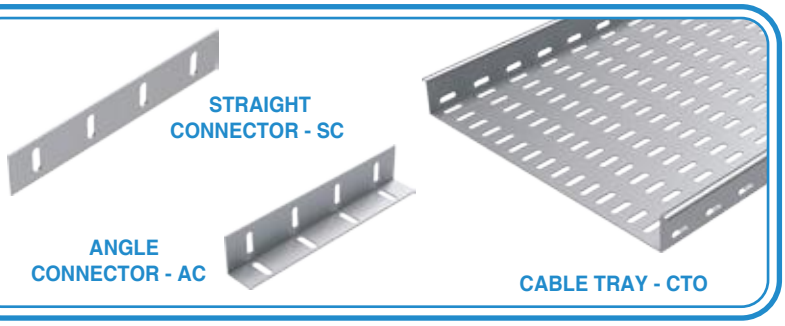

REDUCER LEFT - RL

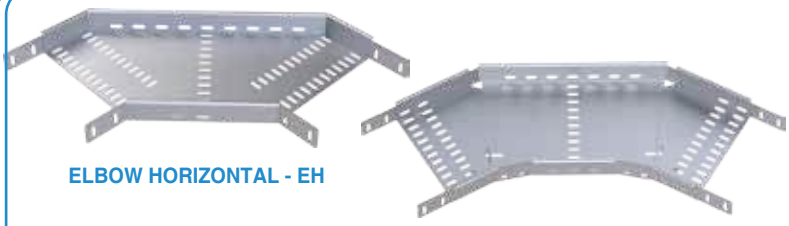

REDUCER STRAIGHT - RS

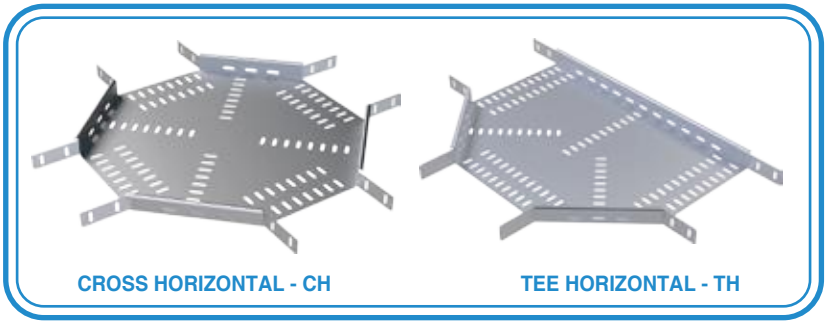

REDUCER RIGHT - RR

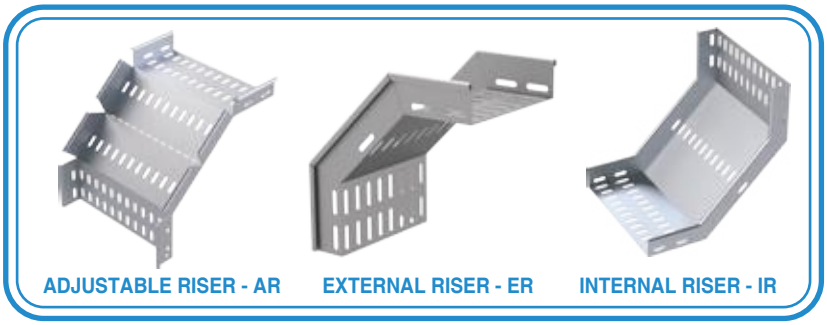
HEAVY DUTY OUTSIDE RETURN FLANGE

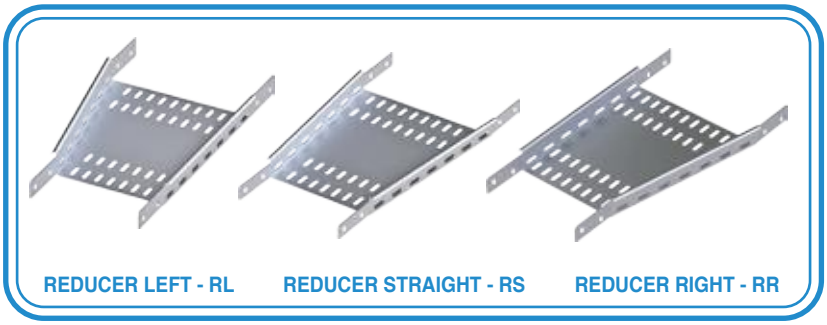












For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

HD / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

HD / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

HD / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH

CTO for Outside Return Flange

Extra long Adjustable Riser can also be produced on request as Internal or External Riser.

HD / CTI / XLAR / WIDTH / THK / FINISH

CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

HD / CTI / REDUCER / WIDTH / THK / FINISH

CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the fitting.

Reducer Right can be used where cable trays have the limitation of run on the left hand side

Reducer Left can be used where cable trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

HD / CTI / FC / THK / FINISH

EXTRA HEAVY DUTY CABLE TRAY SYSTEMS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

EXAMPLE: For 600 mm wide Cable Tray

EXTRA HEAVY DUTY CABLE TRAY

XHD / COMPONENT / WIDTH / THK / FINISH
XHD / CTI / 600 / 2 / HDG *(CTO for Outside Return Flange)*

EXAMPLE: For 600 mm wide Elbow Horizontal 90 ^{0}

EXTRA HEAVY DUTY CABLE TRAY FITTINGS

XHD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH
XHD / CTI / EH / 600 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

FOR STRAIGHT LENGTHS AND FITTINGS

Width (W)	Thickness (THK)
All dimensions are in mm	
75 to 150	1.0 / 1.2 / 1.5 / 2.0 / 2.5
225 to 300	1.0 / 1.2 / 1.5 / 2.0 / 2.5
450 to 600	1.2 / 1.5 / 2.0 / 2.5
750 to 900	2.0 / 2.5

PSI - Extra Heavy Duty Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Extra Heavy Duty Inside / Outside Return Flange Cable Tray Fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the Trays & Fittings above 300 mm widths for better load bearing capacity.

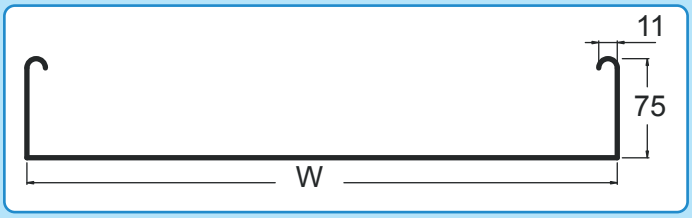
STRAIGHT / ANGLE / FLANGE CONNECTOR

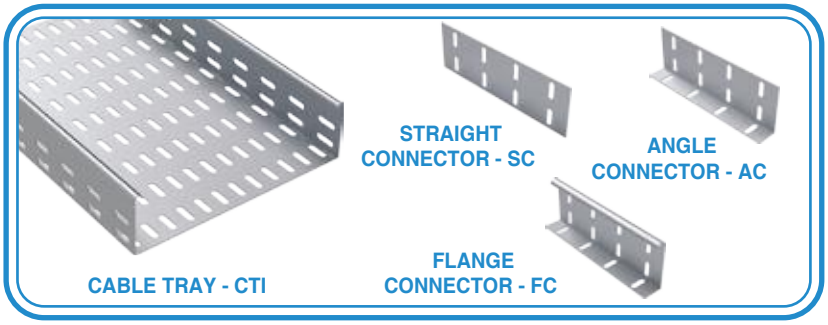
For Component Width (mm)	Thickness (THK) (mm)
75 to 900	1.5 - 2.5

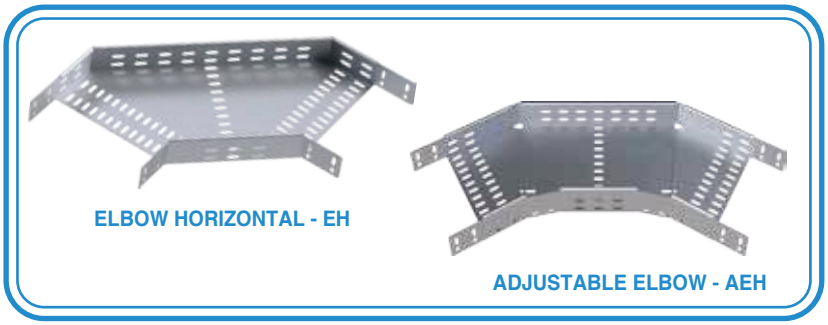
- ★ Select an appropriate connector to suit your requirements
- ★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

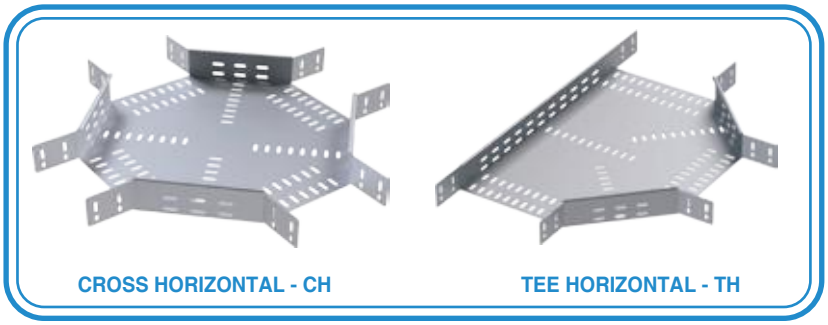
XHD / CTI / SC / THK / FINISH
CTO for Outside Return Flange

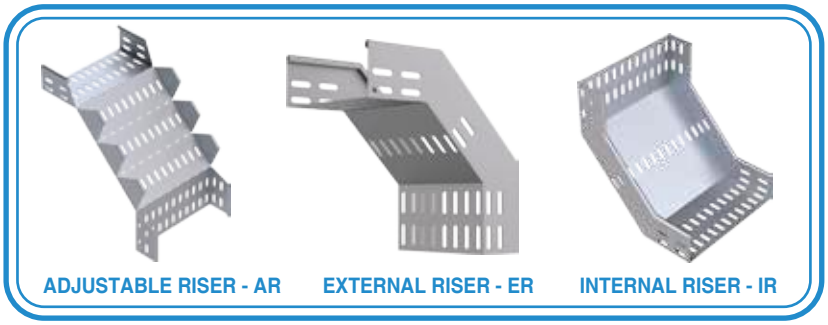
EXTRA HEAVY DUTY INSIDE RETURN FLANGE

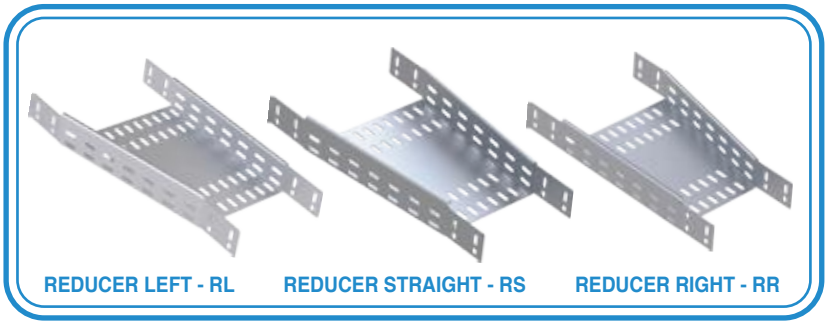




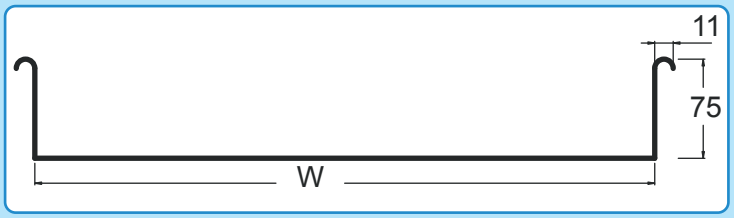


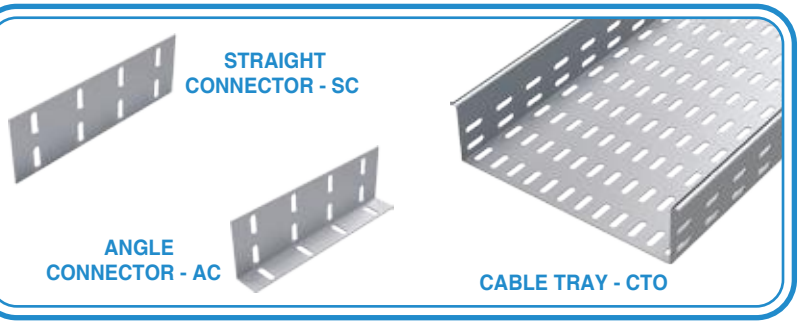


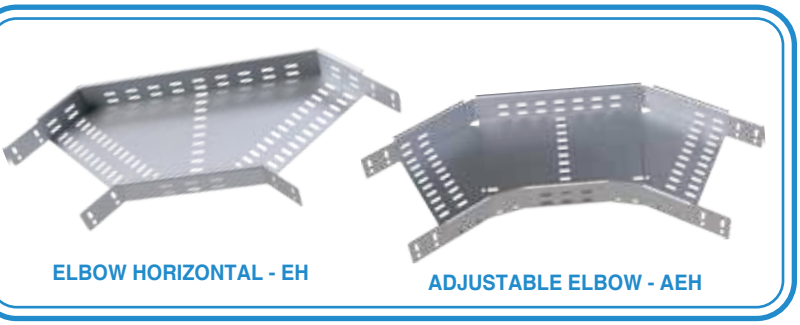


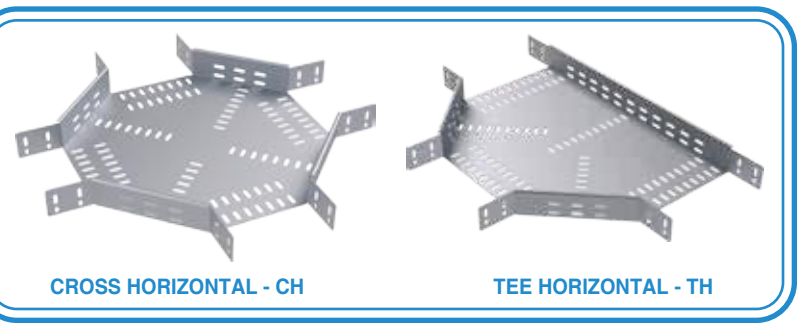


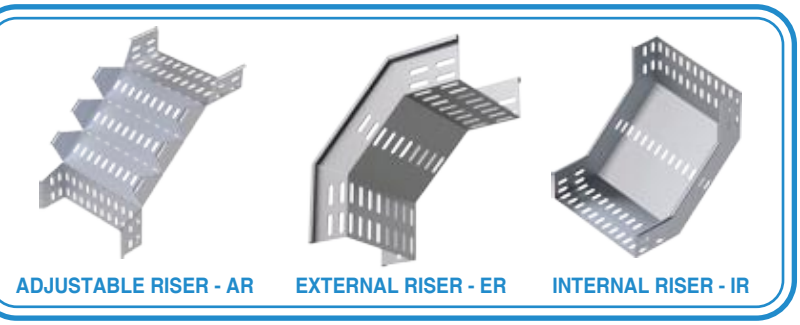
EXTRA HEAVY DUTY OUTSIDE RETURN FLANGE

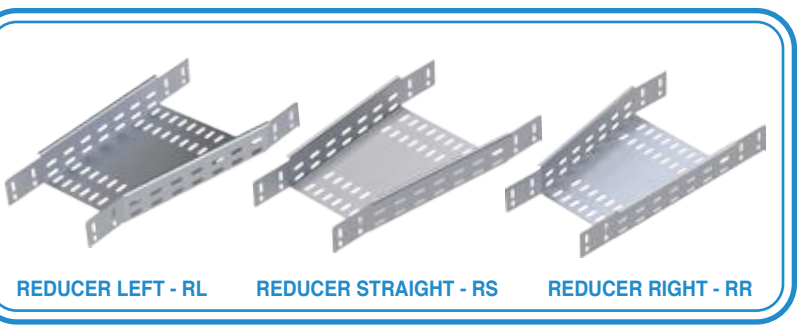












For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

XHD / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

XHD / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

XHD / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH

CTO for Outside Return Flange

Extra long Adjustable Riser can also be produced on request as Internal or External Riser.

XHD / CTI / XLAR / WIDTH / THK / FINISH

CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

XHD / CTI / REDUCER / WIDTH / THK / FINISH

CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the Fitting.

Reducer Right can be used where cable trays have the limitation of run on the left hand side

Reducer Left can be used where cable trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

XHD / CTI / FC / THK / FINISH

DOUBLE EXTRA HEAVY DUTY CABLE TRAY SYSTEMS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

EXAMPLE: For 600 mm wide Cable Tray

DOUBLE EXTRA HEAVY DUTY CABLE TRAY

XXHD / COMPONENT / WIDTH / THK / FINISH
XXHD / CTI / 600 / 2 / HDG *(CTO for Outside Return Flange)*

EXAMPLE: For 600 mm wide Elbow Horizontal 90 ^{0}

DOUBLE EXTRA HEAVY DUTY CABLE TRAY FITTINGS

XXHD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH
XXHD / CTI / EH / 600 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

FOR STRAIGHT LENGTHS AND FITTINGS

Width (W)	Thickness (THK)
All dimensions are in mm	
100 to 300	1.2 / 1.5 / 2.0 / 2.5
450 to 600	1.5 / 2.0 / 2.5
750 to 900	2.0 / 2.5

PSI - Double Extra Heavy Duty Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Double Extra Heavy Duty Inside / Outside Return Flange Cable Tray Fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the Trays & Fittings above 300 mm widths for better load bearing capacity.

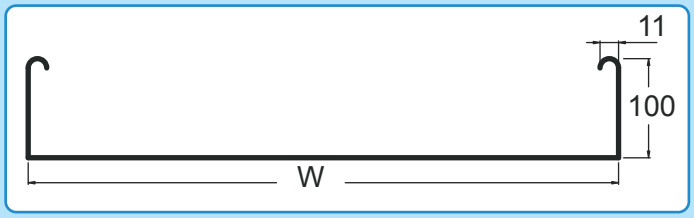
STRAIGHT / ANGLE / FLANGE CONNECTOR

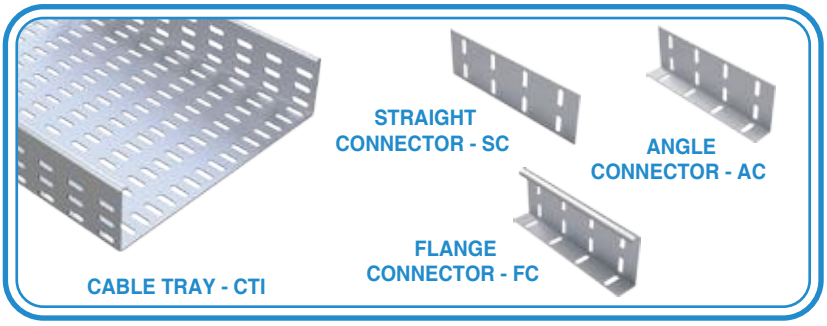
For Component Width (mm)	Thickness (THK) (mm)
100 to 900	1.5 - 2.5

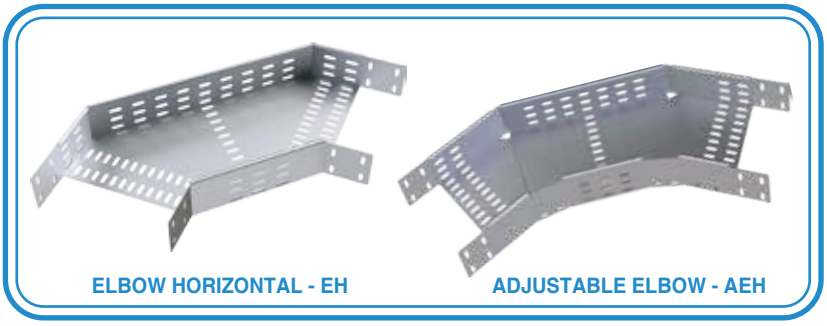
★ Select an appropriate connector to suit your requirements
★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

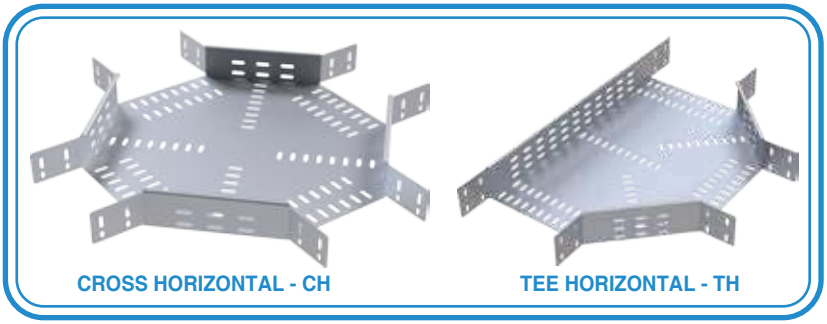
XXHD / CTI / SC / THK / FINISH
CTO for Outside Return Flange

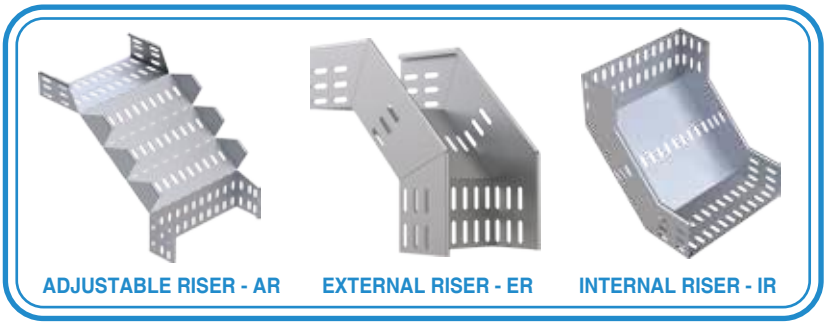
DOUBLE EXTRA HEAVY DUTY INSIDE RETURN FLANGE

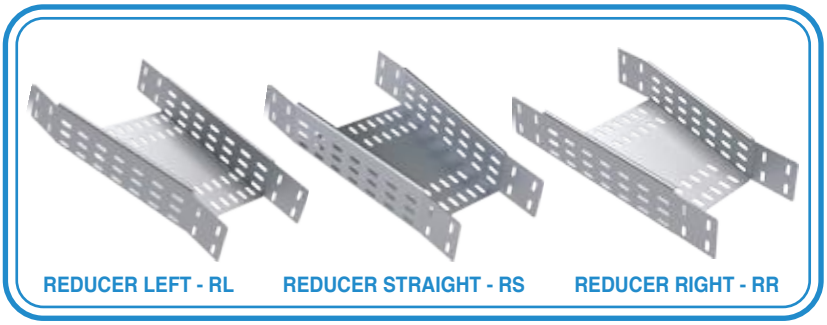




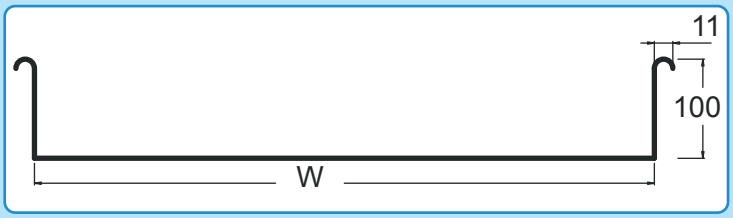


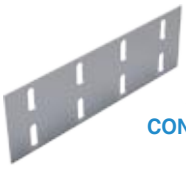






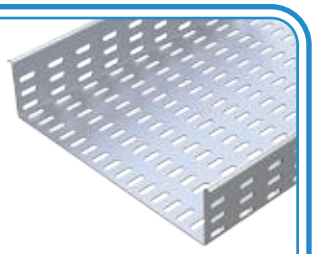
DOUBLE EXTRA HEAVY DUTY OUTSIDE RETURN FLANGE





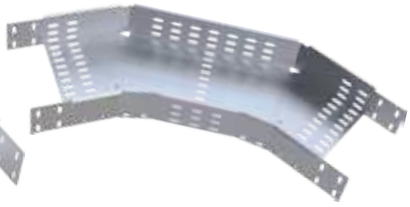
STRAIGHT CONNECTOR - SC

ANGLE CONNECTOR - AC

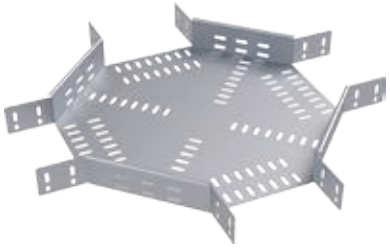


CABLE TRAY - CTO

ELBOW HORIZONTAL - EH



ADJUSTABLE ELBOW - AEH



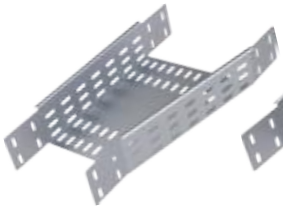
CROSS HORIZONTAL - CH

TEE HORIZONTAL - TH

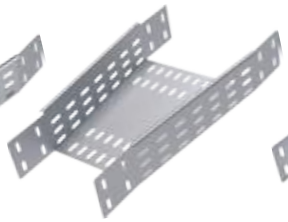
ADJUSTABLE RISER - AR

EXTERNAL RISER - ER

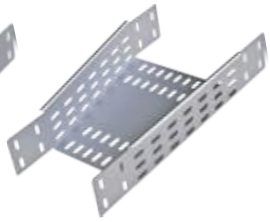
INTERNAL RISER - IR



REDUCER LEFT - RL



REDUCER STRAIGHT - RS



REDUCER RIGHT - RR

For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

XXHD / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH
CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

XXHD / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH
CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

XXHD / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH
CTO for Outside Return Flange

Extra long Adjustable riser can also be produced on request as Internal or External Riser.

XXHD / CTI / XLAR / WIDTH / THK / FINISH
CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

XXHD / CTI / REDUCER / WIDTH / THK / FINISH
CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the fittings.

Reducer Right can be used where Cable Trays have the limitation of run on the left hand side

Reducer Left can be used where Cable Trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

XXHD / CTI / FC / THK / FINISH

CABLE TRAY ROUND RADIAL FITTINGS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

Select the desired duty application

MD : Medium Duty
HD : Heavy Duty
XHD : Extra Heavy Duty
XXHD : Double Extra Heavy Duty

Add " R " as a Suffix to the Fitting required

EXAMPLE: For 750 mm wide Tee Horizontal 90 ^{0}

CABLE TRAY ROUND RADIAL FITTINGS

HD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH

HD / CTI / THR / 750 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

DUTY APPLICATION & SIZES

To select the desired fitting according to the duty application, refer to the concerned page for the selection of width, side height and thickness.

CTI : Cable Tray with Inside Return Flange
CTO : Cable Tray with Outside Return Flange

Suffix "R": Indicates round radial fitting

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

PSI - Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Inside / Outside Return Flange Cable Tray fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the trays & fittings above 300 mm widths for better load bearing capacity.

STRAIGHT / ANGLE / FLANGE CONNECTOR

For Component Width (mm)	Thickness (THK) (mm)
50 to 900	1.5 - 2.5

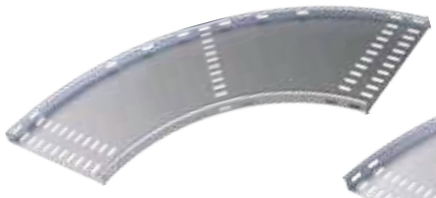
★ Select an appropriate connector to suit your requirements
★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

DUTY / CTI / SC / THK / FINISH
CTO for Outside Return Flange

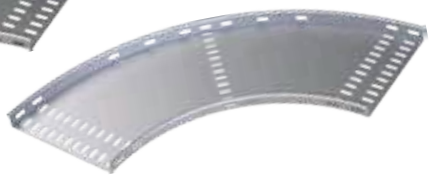
MEDIUM DUTY ROUND RADIAL FITTINGS

INSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR

OUTSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR



INSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR



OUTSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR

INSIDE RETURN FLANGE
TEE HORIZONTAL - THR

OUTSIDE RETURN FLANGE
TEE HORIZONTAL - THR

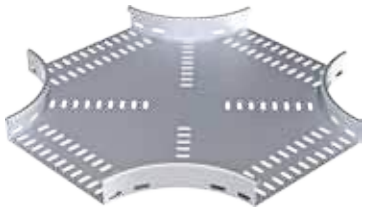
INSIDE RETURN FLANGE
INTERNAL RISER - IRR

OUTSIDE RETURN FLANGE
INTERNAL RISER - IRR

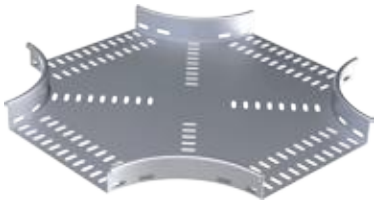
INSIDE RETURN FLANGE
EXTERNAL RISER - ERR

OUTSIDE RETURN FLANGE
EXTERNAL RISER - ERR

HEAVY DUTY ROUND RADIAL FITTINGS



INSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR



OUTSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR

INSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR

OUTSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR

INSIDE RETURN FLANGE
TEE HORIZONTAL - THR

OUTSIDE RETURN FLANGE
TEE HORIZONTAL - THR

INSIDE RETURN FLANGE
INTERNAL RISER - IRR

OUTSIDE RETURN FLANGE
INTERNAL RISER - IRR

INSIDE RETURN FLANGE
EXTERNAL RISER - ERR

OUTSIDE RETURN FLANGE
EXTERNAL RISER - ERR

For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

DUTY / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

DUTY / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

DUTY / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH

CTO for Outside Return Flange

Extra long Adjustable Riser can also be produced on request as Internal or External Riser.

DUTY / CTI / XLAR / WIDTH / THK / FINISH

CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

DUTY / CTI / REDUCER / WIDTH / THK / FINISH

CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the fitting.

Reducer Right can be used where Cable Trays have the limitation of run on the left hand side

Reducer Left can be used where Cable Trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

DUTY / CTI / FC / THK / FINISH

CABLE TRAY ROUND RADIAL FITTINGS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

Select the desired duty application

MD : Medium Duty
HD : Heavy Duty
XHD : Extra Heavy Duty
XXHD : Double Extra Heavy Duty

Add " R " as a Suffix to the Fitting required

EXAMPLE: For 750 mm wide Tee Horizontal 90 ^{0}

CABLE TRAY ROUND RADIAL FITTINGS

HD / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / THK / FINISH
HD / CTI / THR / 750 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

DUTY APPLICATION & SIZES

To select the desired fitting according to the duty application, refer to the concerned page for the selection of width, side height and thickness.

CTI : Cable Tray with Inside Return Flange
CTO : Cable Tray with Outside Return Flange
Suffix "R": Indicates round radial fitting

STANDARD FINISHES

HDG	Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG	Pre-galvanized to BS EN 10346 : 2015
PC	Powder Coating to suit clients requirements
EP	Epoxy Painting to suit clients requirements
SS	Stainless steel finish to BS EN 10088-2 : 2014
AL	Aluminium finish to required grades
AZ	Aluzinc finish

PSI - Inside / Outside Return Flange Cable Trays are produced in a standard length of 3 mtrs but can be produced in different lengths on request.

PSI - Inside / Outside Return Flange Cable Tray fittings are produced to radius of 150 mm, 300 mm, 450 mm, 600 mm & 900 mm. Radius of 150 mm is considered if not mentioned.

Fish Plates are recommended for the trays & fittings above 300 mm widths for better load bearing capacity.

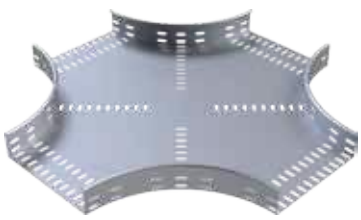
STRAIGHT / ANGLE / FLANGE CONNECTOR

For Component Width (mm)	Thickness (THK) (mm)
50 to 900	1.5 - 2.5

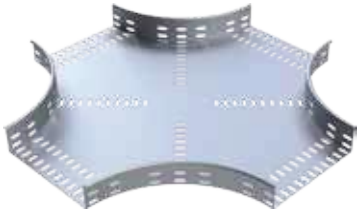
★ Select an appropriate connector to suit your requirements
★ The connectors are supplied with one set of M6 x 15 roofing bolt, nut and washer.

DUTY / CTI / SC / THK / FINISH
CTO for Outside Return Flange

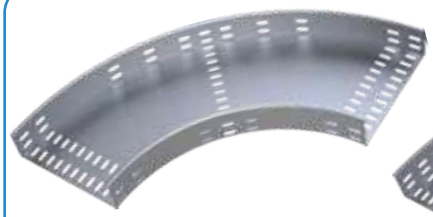
EXTRA HEAVY DUTY ROUND RADIAL FITTINGS



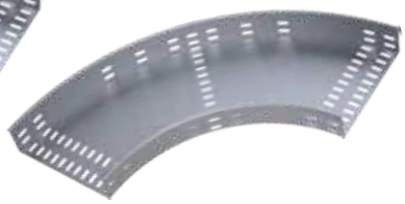
INSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR



OUTSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR



INSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR



OUTSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR

INSIDE RETURN FLANGE
TEE HORIZONTAL - THR

OUTSIDE RETURN FLANGE
TEE HORIZONTAL - THR

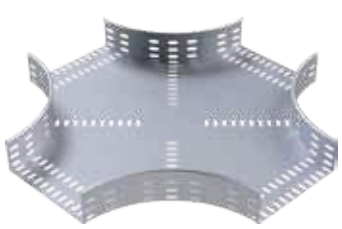
INSIDE RETURN FLANGE
INTERNAL RISER - IRR

OUTSIDE RETURN FLANGE
INTERNAL RISER - IRR

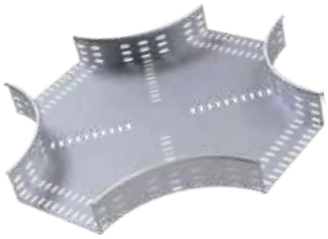
INSIDE RETURN FLANGE
EXTERNAL RISER - ERR

OUTSIDE RETURN FLANGE
EXTERNAL RISER - ERR

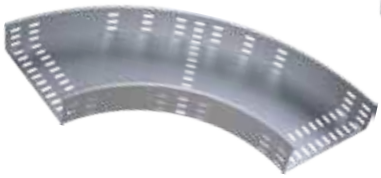
DOUBLE EXTRA HEAVY DUTY ROUND RADIAL FITTINGS



INSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR

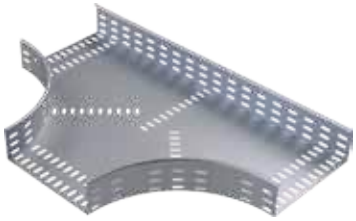


OUTSIDE RETURN FLANGE
CROSS HORIZONTAL - CHR

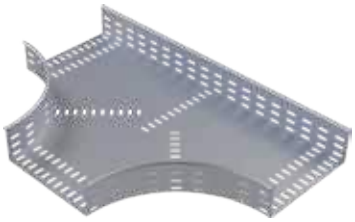


INSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR

OUTSIDE RETURN FLANGE
ELBOW HORIZONTAL - EHR



INSIDE RETURN FLANGE
TEE HORIZONTAL - THR



OUTSIDE RETURN FLANGE
TEE HORIZONTAL - THR

INSIDE RETURN FLANGE
INTERNAL RISER - IRR

OUTSIDE RETURN FLANGE
INTERNAL RISER - IRR

INSIDE RETURN FLANGE
EXTERNAL RISER - ERR

OUTSIDE RETURN FLANGE
EXTERNAL RISER - ERR

For Unequal Elbow, please specify widths W1 & W2 starting from left hand side.

DUTY / CTI / UEH / W1 / W2 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Tee, please specify widths in anti-clockwise direction as W1, W2, W3 starting from left hand side.

DUTY / CTI / UTH / W1 / W2 / W3 / ANGLE / RADIUS / THK / FINISH

CTO for Outside Return Flange

For Unequal Cross specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top.

DUTY / CTI / UCH / W1 / W2 / W3 / W4 / RADIUS / THK / FINISH

CTO for Outside Return Flange

Extra long Adjustable Riser can also be produced on request as Internal or External Riser.

DUTY / CTI / XLAR / WIDTH / THK / FINISH

CTO for Outside Return Flange

For Reducers consider W1 as the larger size & W2 as the smaller size.

DUTY / CTI / REDUCER / WIDTH / THK / FINISH

CTO for Outside Return Flange

Thickness for Unequal Tee, Unequal Cross and Reducers to be considered of the larger size of the fitting.

Reducer Right can be used where Cable Trays have the limitation of run on the left hand side

Reducer Left can be used where Cable Trays have the limitation of run on the right hand side

PSI - Cable Tray Fittings are produced with integral connectors for the ease of installation. No external connectors are required.

Bonding Jumpers are used for the Earthing Connectivity. Refer page 18.

Material finish with deep galvanizing is also produced as per the desired specifications.

Flange connectors are provided for extra strength. Flange connectors wrap up the trays from outside and increases the load bearing capacity of the tray.

DUTY / CTI / FC / THK / FINISH

CABLE TRAY COVERS

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

Select the desired duty application

MD : Medium Duty
HD : Heavy Duty
XHD : Extra Heavy Duty
XXHD : Double Extra Heavy Duty

Add " R " as a Suffix to the Fitting required

EXAMPLE: For 750 mm wide Tee Horizontal 90 ^{0}

CABLE TRAY ROUND RADIAL FITTINGS

DUTY / COMPONENT / FITTING / WIDTH / ANGLE / RADIUS / FINISH

DUTY / CTI / THC / 750 / 90 / 300 / HDG ***(CTO for Outside Return Flange)***

DUTY APPLICATION & SIZES

To select the desired fitting according to the duty application, refer to the concerned page for the selection of width, side height and thickness.

CTI : Cable Tray with Inside Return Flange
CTO : Cable Tray with Outside Return Flange

Suffix "R": Indicates round radial fitting

STANDARD FINISHES

HDG Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG Pre-galvanized to BS EN 10346 : 2015
PC Powder Coating to suit clients requirements
EP Epoxy Painting to suit clients requirements
SS Stainless steel finish to BS EN 10088-2 : 2014
AL Aluminium finish to required grades
AZ Aluzinc finish

COVERS FOR STRAIGHT LENGTHS AND ACCESSORIES

Range / Width (W)	Thickness (T)	Side Height (H)
All dimensions are in mm		
50 to 300	1.0	11
450 to 600	1.2	11
750 to 900	1.5	11

VENTILATED COVER CLAMP

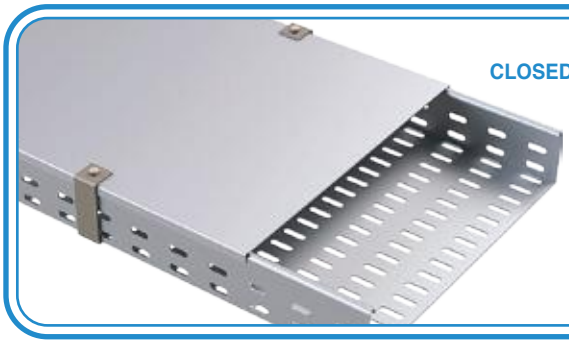
Ventilated Cover Clamp VCC is supplied for Ventilated cover arrangement with the set of M6 x 15 roofing bolt, nut & washer. To be ordered separately.

CLOSED COVER CLAMP

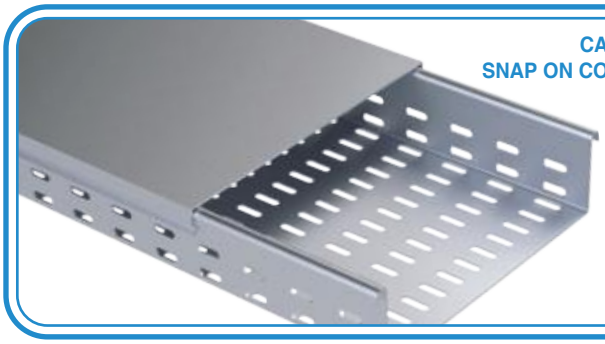
Screw type closed cover clamp SCC is supplied for closed cover arrangement with the set of M6 x 15 roofing bolt, nut & washer. PCC is a push type option & requires no bolts.To be ordered separately.

WRAP OVER COVER CLAMP

Wrapover Cover Clamp WCC is supplied for closed cover arrangement with the set of M6 x 15 roofing bolt, nut & washer. To be ordered separately.



CABLE TRAY
CLOSED COVERS - CC

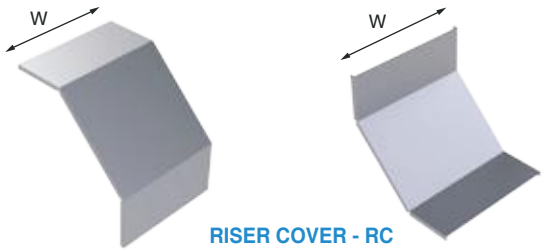


CABLE TRAY
SNAP ON COVERS - SC

TEE HORIZONTAL COVER - THC

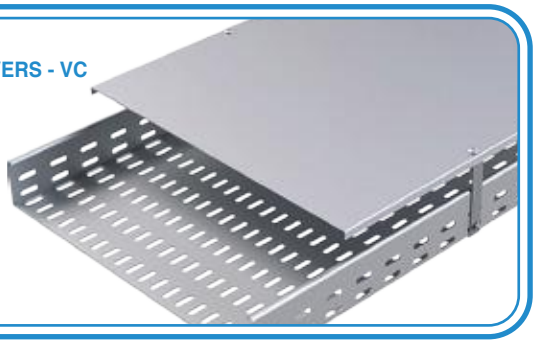
ELBOW HORIZONTAL COVER - EHC

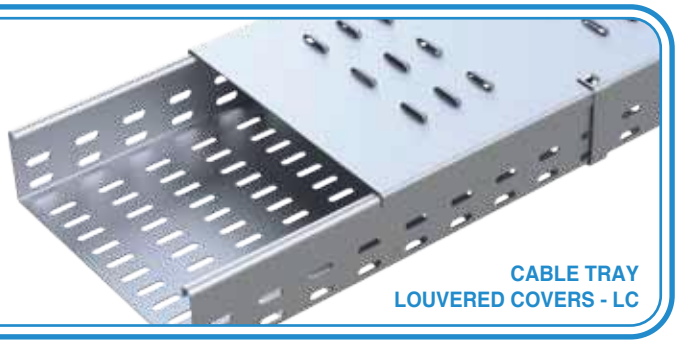
CROSS HORIZONTAL COVER - CHC



RISER COVER - RC

CABLE TRAY
VENTILATED COVERS - VC



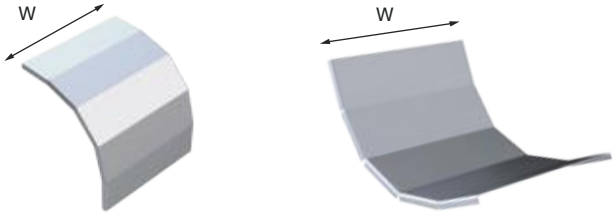


CABLE TRAY
LOUVERED COVERS - LC

TEE HORIZONTAL COVER - THRC

ELBOW HORIZONTAL COVER - EHRC

CROSS HORIZONTAL COVER - CHRC



ROUND RADIAL RISER COVERS - RRC

COVER CLAMPS

For Unequal Elbow Cover, please specify widths W1 & W2 starting from left hand side. *For Example*

HD / CTI / UEHCC / W1 / W2 / ANGLE / RADIUS / FINISH
HD / CTI / UEHVC / W1 / W2 / ANGLE / RADIUS / FINISH
CTO for Outside Return Flange

For Unequal Cross Cover specify the widths as W1,W2,W3,W4 in anti-clockwise direction starting from the top. *For Example*

HD / CTI / UCHCC / W1 / W2 / W3 / W4 / RADIUS / FINISH
HD / CTI / UEHVC / W1 / W2 / W3 / W4 / RADIUS / FINISH
CTO for Outside Return Flange

For Unequal Tee Cover, please specify widths in anti- clockwise direction as W1, W2, W3 starting from left hand side. *For Example*

HD / CTI / UTHCC / W1 / W2 / W3 / RADIUS / FINISH
HD / CTI / UTHVC / W1 / W2 / W3 / RADIUS / FINISH
CTO for Outside Return Flange

Extra long Adjustable Riser Cover can also be produced on request. *For Example*

HD / CTI / XLARCC / WIDTH / RADIUS / FINISH
HD / CTI / XLARVC / WIDTH / RADIUS / FINISH
CTO for Outside Return Flange

For Reducer Straight Cover, please specify widths as W1 being the large size and W2 being the smaller size. *For Example*

HD / CTI / RSCC / W1 / W2 / RADIUS / FINISH
HD / CTI / RSVC / W1 / W2 / RADIUS / FINISH
CTO for Outside Return Flange

For Cover Clamps use " I " as a suffix for Cable Tray Inside Return Flange Cover arrangements.

For Cover Clamps use " O " as a suffix for Cable Tray Outside Return Flange Cover arrangements.

HD / CTI / COVER CLAMP / FINISH
HD / CTO / COVER CLAMP / FINISH

Wrap Over Clamps can be used for both type of Cover arrangements.

For special sizes, design, consult our sales team.

CABLE TRAY ACCESSORIES

ORDER PATTERN

To select the required component, please specify the component, width, radius and finish. Angles can be mentioned wherever necessary.

Select the desired duty application

MD : Medium Duty
HD : Heavy Duty
XHD : Extra Heavy Duty
XXHD : Double Extra Heavy Duty

Add " R " as a Suffix to the Accessory required

EXAMPLE: For 750 mm wide Box Connector

CABLE TRAY ACCESSORIES

DUTY / COMPONENT / ACCESSORY / WIDTH / ANGLE / RADIUS / THK / FINISH

DUTY / CTI / THR / 750 / 90 / 300 / 2 / HDG *(CTO for Outside Return Flange)*

DUTY APPLICATION & SIZES

To select the desired accessory according to the duty application, refer to the concerned page for the selection of width, side height and thickness.

CTI : Cable Tray with Inside Return Flange
CTO : Cable Tray with Outside Return Flange

Suffix "R": Indicates round radial accessory

STANDARD FINISHES

HDG Hot dip Galvanized to BS EN ISO 1461 : 2009 ASTM 123
PG Pre-galvanized to BS EN 10346 : 2015
PC Powder Coating to suit clients requirements
EP Epoxy Painting to suit clients requirements
SS Stainless steel finish to BS EN 10088-2 : 2014
AL Aluminium finish to required grades
AZ Aluzinc finish

Cable Tray Accessories are produced to suit standard and complexed installations of the cable tray system.

For special sizes, gauges, flanges, consult our sales team, factory.

For special design & finishes consult our sales team, factory.

BONDING JUMPER

AREA : 4 mm^2

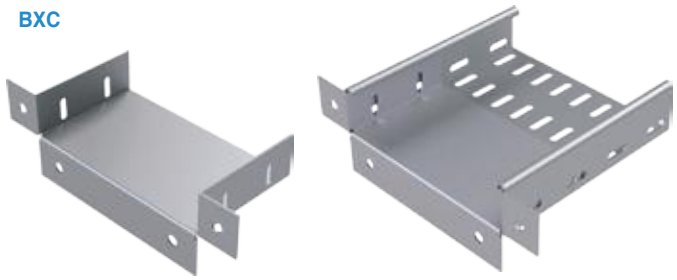
Bonding Jumper for Cable Tray earthing connectivity is produced from braided tinned copper with M6 copper lugs on both sides. Roofing bolts M6 x 15 , nuts & washers are used for fastening. Bonding Jumpers with different cross section and lengths can also be ordered on request. To be ordered seperately.

BLIND END

For Component Width (mm)	Thickness (THK) (mm)
50 to 300	1.5
450 to 900	2.0

Roofing bolt M6 x 15, nuts and washers are used for fastening.

BXC

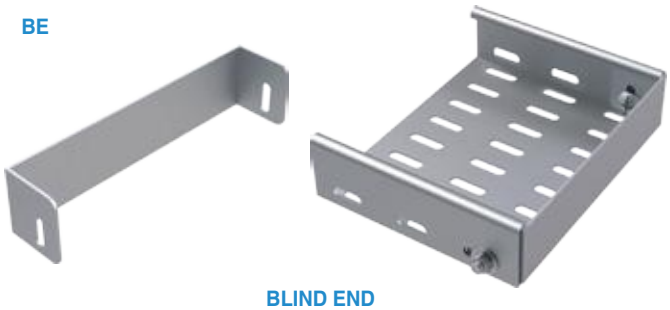


BOX CONNECTOR

FP

FISH PLATE

BE



BLIND END

RC

REDUCING CONNECTOR

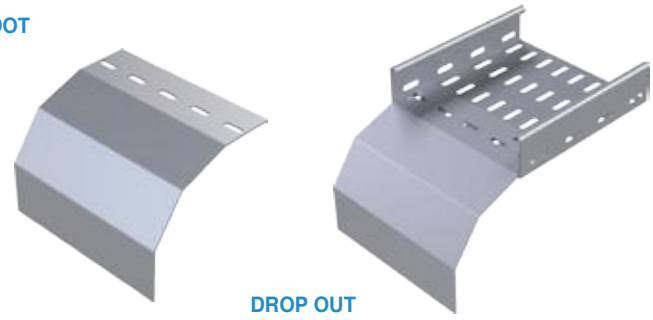
BJC

BONDING JUMPER

AVC

ADJUSTABLE VERTICAL CONNECTOR

DOT



DROP OUT

BS

BARRIER STRAIGHT

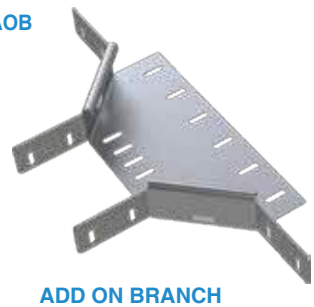
EXC

EXFC

EXPANSION CONNECTOR

EXPANSION FISH CONNECTOR

AOB



ADD ON BRANCH

HDC

HOLD DOWN CLAMP

REDUCING CONNECTOR

For Component Width (mm)	Thickness (THK) (mm)
50 to 300	1.5
450 to 900	2.0

Roofing bolt M6 x 15, nuts and washers are used for fastening.

ADJUSTABLE VERTICAL CONNECTOR

Adjustable Vertical Connectors are produced to standard 2mm thickness.Roofing bolt M6 x 15, nuts and washers are used for fastening.

BOX CONNECTOR

For Component Width (mm)	Thickness (THK) (mm)
50 to 300	1.5
450 to 900	2.0

Roofing bolt M6 x 15, nuts and washers are used for fastening.

DROP OUT

For Component Width (mm)	Thickness (THK) (mm)
50 to 300	1.5
450 to 900	2.0

Roofing bolt M6 x 15, nuts and washers are used for fastening.

FISH PLATE

For Component Width (mm)	Thickness (THK) (mm)
50 to 300	1.5
450 to 900	2.0

Roofing bolt M6 x 15, nuts and washers are used for fastening.

BARRIER STRAIGHT

All barrier straights are produced to standard length of 3 mtr and 1.5 mm thickness. Roofing bolt M6 x 15, nuts and washers are used for fastening.

HOLD DOWN CLAMP

Hold Down Clamps are produced to standard thickness of 2mm and hexagonal bolt M8 x 20 nuts and washers are used for fastening.

ADD ON BRANCH

Add On Branch is used to provide a direction extension to the Cable Tray to form a T- Junction. Roofing bolt M6 x 15, nuts and washers are used for fastening.

CABLE TRAY LOAD GRAPHS

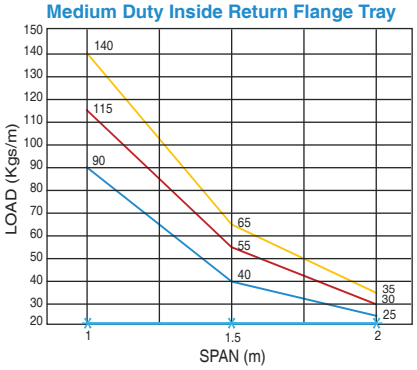
SAFE WORKING LOADS

The following Loading Charts are to give guidance on maximum safe working loads when using Cable Ladders & Trays (installed horizontally) produced by PSI. They are published in accordance with the requirements of the industry standard BS EN 61537:2007. Load tests simulated the conditions of a multiple span of at least 4 spans with the end spans reduced to 75% of the intermediate spans. When using this information the installer should take into account:

- ★ The guidance offered in our presentation of system design considerations should be studied
- ★ Loading is assumed to be uniformly distributed. If point loads are imposed or the installation is less than 4 spans our technical department should be consulted.
- ★ The graphs should not be extrapolated to shorter or longer spans than those shown.
- ★ The installer should be satisfied that supports are of adequate strength and that all connections are fully tightened
- ★ The loading information is given in good faith based on tests carried out with PSI products. However,PSI cannot be held responsible for a variation in performance of this product range.

The graphical presentation links established maximum safe working loads at specified intermediate spans.
Loads below the drawn line are SAFE - loads above the drawn line are UNSAFE.

Medium Duty Inside Return Flange Tray



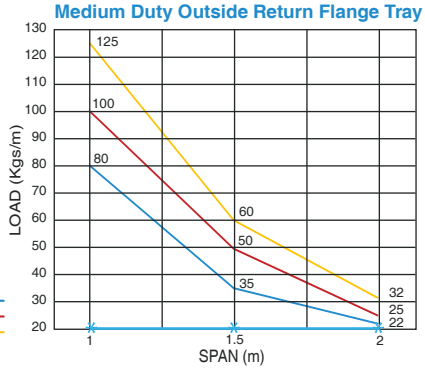
Medium Duty Inside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
90	115	140	1
40	55	65	1.5
25	30	35	2

150 mm wide
300 mm wide
600 mm wide

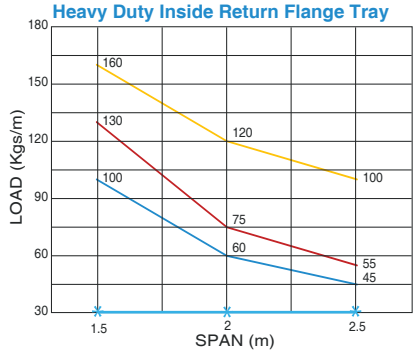
Medium Duty Outside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
80	100	125	1
35	50	60	1.5
22	25	32	2

150 mm wide
300 mm wide
600 mm wide

Medium Duty Outside Return Flange Tray



Heavy Duty Inside Return Flange Tray



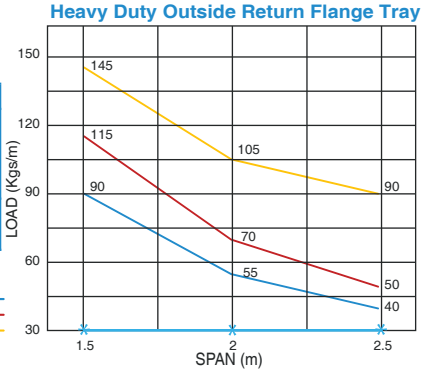
Heavy Duty Inside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
100	130	160	1.5
60	75	120	2
45	55	100	2.5

150 mm wide
300 mm wide
600 mm wide

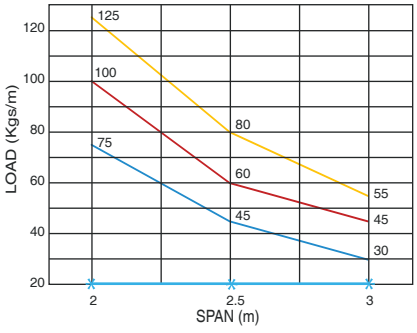
Heavy Duty Outside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
90	115	145	1.5
55	70	105	2
40	50	90	2.5

150 mm wide
300 mm wide
600 mm wide

Heavy Duty Outside Return Flange Tray



Extra Heavy Duty Inside Return Flange Tray



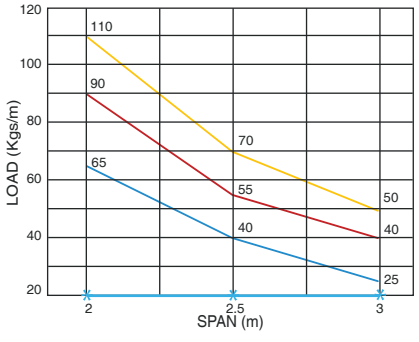
Extra Heavy Duty Inside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
75	100	125	2
45	60	80	2.5
30	45	55	3

150 mm wide
300 mm wide
600 mm wide

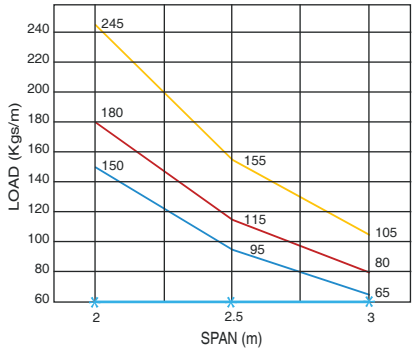
Extra Heavy Duty Outside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
65	90	110	2
40	55	70	2.5
25	40	50	3

150 mm wide
300 mm wide
600 mm wide

Extra Heavy Duty Outside Return Flange Flange Tray



Double Extra Heavy Duty Inside Return Flange Tray



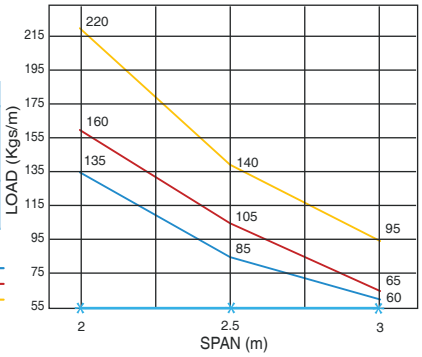
Double Extra Heavy Duty Inside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
150	180	245	2
95	115	155	2.5
65	80	105	3

150 mm wide
300 mm wide
600 mm wide

Double Extra Heavy Duty Outside Return Flange Tray			
150	300	600	Span Between Supports (m)
Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	Uniformely Distributed load (Kgs/m)	
135	160	220	2
85	105	140	2.5
60	65	95	3

150 mm wide
300 mm wide
600 mm wide

Double Extra Heavy Duty Outside Return Flange Tray



WARNING!

PSI CABLE TRAYS & LADDERS ARE PART OF A CABLE MANAGEMENT SYSTEM. THEY SHOULD NEVER BE USED FOR OTHER STRUCTURAL PURPOSES AND MUST NOT BE USED AS WALKWAYS BY INSTALLATION OR MAINTENANCE PERSONNEL.

THERMAL EXPANSION & CONTRACTION

Installation of Cable Management and Cable Support Systems must consider thermal expansion and contraction.

The cable ladder/tray/trunking should be anchored at the support nearest to its midpoint between the expansion splice plates and secured by expansion guides at all other support locations, refer to Figure 1. The cable ladder/tray/trunking should be allowed longitudinal movement in both directions from that fixed point.

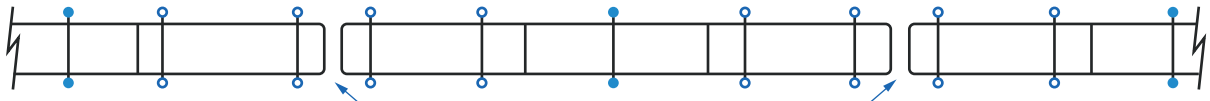


Figure 1

Hold Down and Guide Clamp Locations

- ★ Accurate gap setting at the time of installation is necessary for the correct operation of the expansion splice plates.
- ★ The following procedure should be adopted to determine the correct gap with reference to Figure 2.

- ★ Plot the highest expected temperature on the maximum temperature line (Ex. Value = 38^{0}C)
- ★ Plot the lowest expected temperature on the minimum temperature line (Ex. Value = -33^{0}C)
- ★ Draw a line between the maximum and minimum points
- ★ Plot the temperature at the time of installation to determine the gap setting (Ex.Value = 9.5mm (10^{0}C)

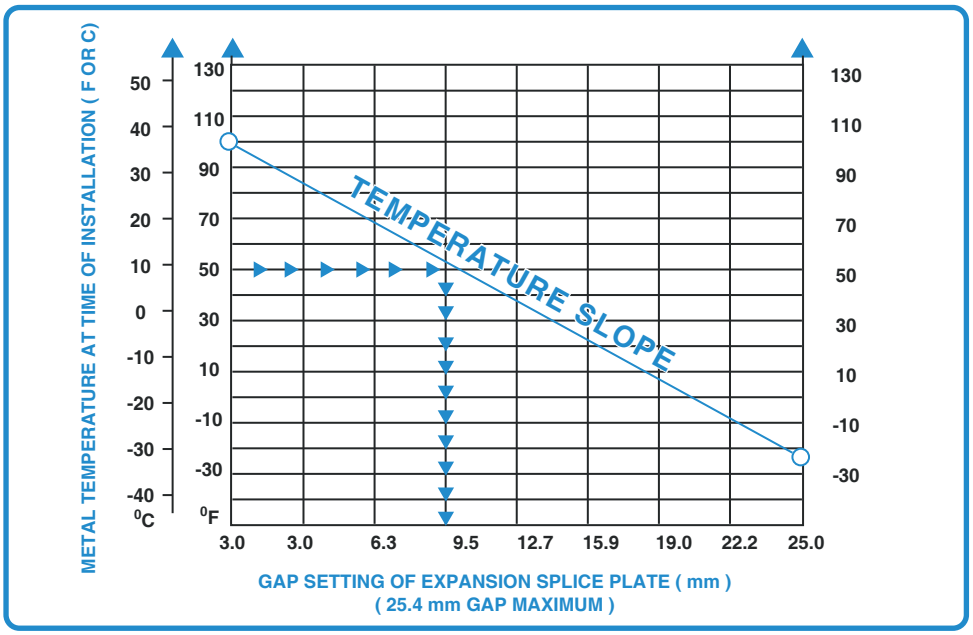


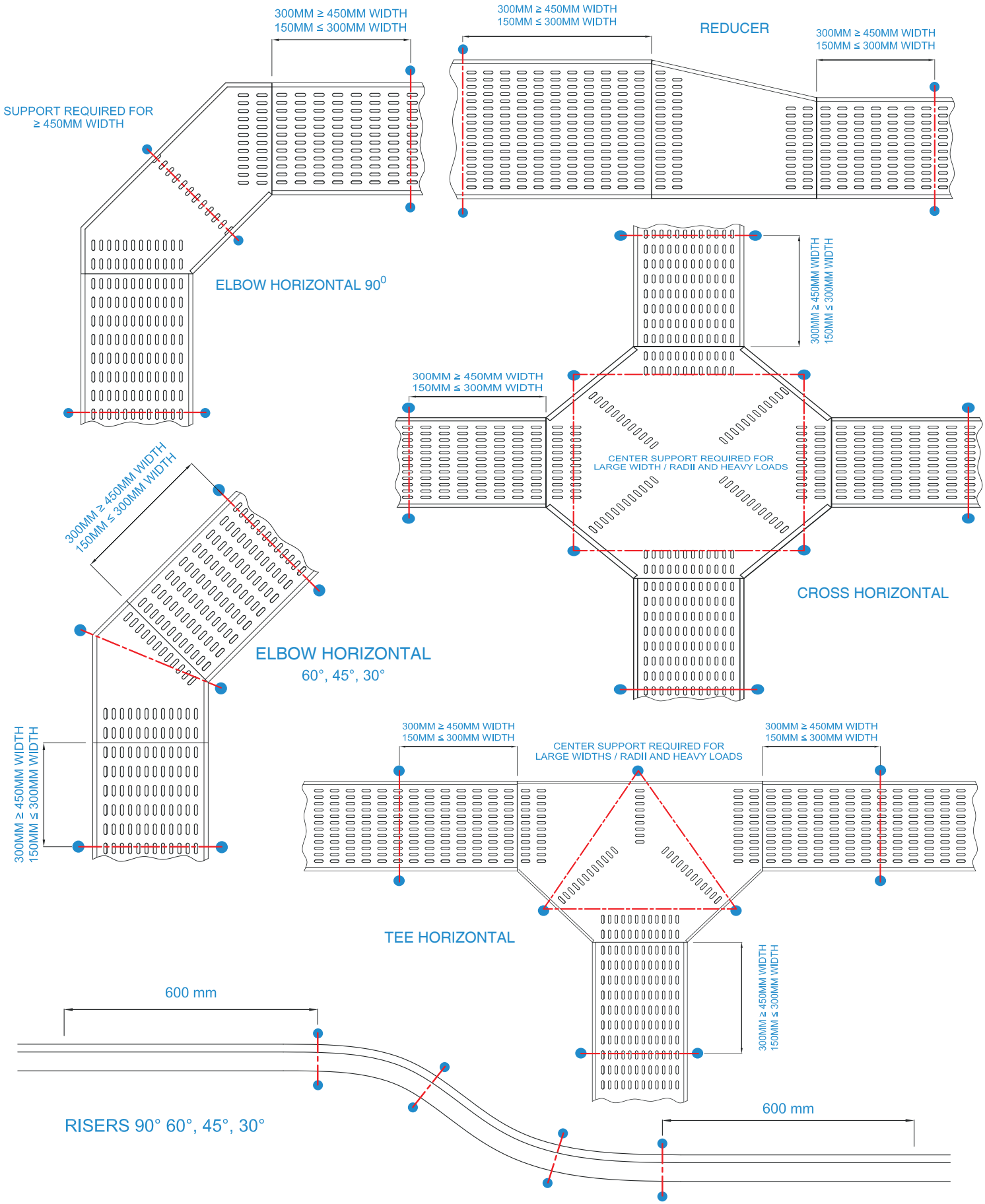
Figure 2

Maximum Spacing Between Expansion Joints For 25.4mm Movement					
Temperature Differential	**Steel**	**Aluminium**	**Stainless Steel 304**	**Stainless Steel 316**	**Fiberglass**
°C	**M**	**M**	**M**	**M**	**M**
14	156	79	106	116	203
28	78	40	53	58	102
42	52	27	36	39	68
56	39	20	27	29	51
70	31	16	21	23	41
83	26	13	18	19	34
97	22	11	15	17	29

- ★ Temperature differential is the difference in temperature between the hottest and coldest days of the year
- ★ Expansion joints require bonding for electrical continuity
- ★ Supports should be located within 600mm each side of expansion splice plates.

RECOMMENDED SUPPORT LOCATIONS

Guidelines for the recommended maximum distance of a support location from the connection point of a Cable Tray Fitting.



INSTALLATION GUIDE

The following Information is given as guidance on the installation of PSI Cable Tray Systems in accordance with given parameters.

- Selection of the type of cable tray should be in accordance with loading requirements of the installation.
- Selection of the type and positioning of supports should be appropriate for the loading requirements of the installation.
- An allowance should be considered for extra cable load to be applied to the cable tray at a future date and the selection of the type of cable tray and supports should reflect this.
- Connection of cable trays should ideally be positioned at approximately 0.25L of a support where the bending moment is at zero. Connection of the cable trays should be avoided at mid span or at supports where the bending moment is at maximum and only one connection should be used in each span.
- Installation should be over a multiple span of at least 4 spans with the end spans reduced to 75% of the intermediate spans with no joints in the end spans.
- Loading of the cable tray should be uniformly distributed both along the length and width.
- Assembly of components of the cable tray system uses M6 roofing bolts and nuts, they should be inserted correctly to avoid damage to the cables and torque tightened to 6Nm
- Wider cable trays may be subject to deflection across the width due to the load distribution; this will not be detrimental to the structural performance of the tray but may need consideration if aesthetic appearance is of importance. ‘Fish Plates’ should be installed on cable trays of 450mm and above
- Where there is connection of cable tray accessories (bends, tees, risers, etc.) extra local support should be installed.
- Cable tray should be securely fixed to all supports at both sides using appropriate fixings and/or brackets
- Cable tray runs exposed to wide ambient temperature variations should incorporate expansion connectors in the installation.
- Electrical bonding straps are required to be installed at all connections to ensure earth continuity
- Where it has been necessary to drill or cut items on site damaged surfaces should be repaired in accordance with BS EN ISO 1461 by painting with zinc rich paint.
- PSI cable trays are part of a cable support system; they should never be used for other structural purpose and must not be used as a walkway by installation or maintenance personnel. Appropriate warning signs should be installed in visible locations on or near the cable trays/cable ladders.
- Installation of systems should be by a competent person(s) familiar with standard electrical installation practices, electrical equipment and safety of electrical wiring systems. When handling, transporting and installing cable tray systems Health & Safety practices and procedures should be strictly enforced at all times including the use of PPE (eye protection, gloves, shoes)
- Loading and deflection information given is based on results from testing of PSI systems; they are however average values given in good faith, PSI cannot be held responsible for a variation in performance of the products actually supplied.

HANDLING AND STORAGE OF MATERIALS

Guidelines on the packing, handling and storage of PSI Cable Management and Cable Support Systems when delivered to the project site:

- Straight lengths of product supplied bundled and securely strapped with nylon bands.
- Fittings supplied palletised and plastic stretch film wrapped.
- All other accessories supplied sacked or boxed, palletised and plastic stretch film wrapped.
- Care must be taken at all times when off-loading materials so as to avoid damage and also violation of Health & Safety regulations.
- Suitable lifting equipment should be used having sufficient lifting height, reach and weight capability.
- Banding straps / wires securing the bundles must never be used for off-loading of materials.
- Lifting straps and / or chains should wrap fully around the bundle in such a way that they do not put excessive force on the bottom or top outside edges of the materials.
- When cutting the banding straps / wires personal safety protection should be used i.e. gloves, eye glasses, shoes, etc.
- If off-loading by a fork truck, forks should never be inserted in to the ends of the bundles.
- Materials should always be stored under cover in a dry environment.
- Materials should not be placed directly on to the floor, wooden and/or steel battens should to support materials.
- If materials have become wet during off-loading, bundles should be split, items dried and then re-stacked in such a way as to ensure maximum air circulation around and throughout the bundles/stacks.
- If no purpose made on-site storage facility is immediately available temporary storage arrangementsneeds to be made and every precaution taken to avoid deterioration of the materials. This should include re-stacking the materials as described in #9 and then covering with waterproof sheeting, ensuring that this is not laid directly on to the materials so maximum ventilation is ensured around and throughout the materials.
- Stored materials should be regularly inspected to evaluate their general condition and particularly to identify any signs of water ingress.
- The above guidelines are the minimum recommendations by PSI and failure to comply could result in deterioration of materials on the project site.

Power Solution Industries offers its range of Cable Management and Cable Support Systems in a variety of materials and finishes to suit the environmental conditions where components will be installed. Choice of an appropriate material/finish is always an important consideration in system design because maintenance of components once installed will be extremely difficult. Clients will undoubtedly expect a long life for the installed system and the choice of appropriate material / finish must consider the expected prevailing atmosphere and its effect on the system components.

Mild steel is an economical material for load bearing structures but if the surface remains untreated, it would rapidly begin to show signs of corrosion even in only mildly aggressive environments. When mild steel corrodes the iron content is converted to oxides (rust) this progressively changes the strong steel into weak oxides which rapidly reduces the load bearing capacity of the affected part. If mild steel is coated with zinc not only is the steel protected by the envelope of zinc whose chemical corrosion rate is low but since zinc is higher in the electro-chemical series, the zinc will always pass into solution before the iron content of steel. The strength of the steel structure will not be weakened by corrosion until the zinc coating has been sacrificed. The length of time it takes for the zinc coating to dissolve is in proportion to the thickness of the coating and the aggressiveness of the environment in which it is exposed.

CARBON STEEL
Compliant with BS EN 10111:2008, BS 10130:2006 & BS 1449-1.1:991

Carbon steel is an economical material for load bearing structures but if the surface remains untreated, it would rapidly begin to show signs of corrosion even in only mildly aggressive environments. When carbon steel corrodes the iron content is converted to oxides (rust) this progressively changes the strong steel into weak oxides which rapidly reduces the load bearing capacity of the affected part. If carbon steel is coated with zinc not only is the steel protected by the envelope of zinc whose chemical corrosion rate is low but since zinc is higher in the electro-chemical series, the zinc will always pass into solution before the iron content of steel. The strength of the steel structure will not be weakened by corrosion until the zinc coating has been sacrificed. The length of time it takes for the zinc coating to dissolve is in proportion to the thickness of the coating and the aggressiveness of the environment in which it is exposed.

PRE-GALVANIZED STEEL (PG) also known as Mill Galvanized Steel
Compliant with BS EN 10346:2015 & BS EN 10143:2006

Whilst the mild steel is still in wide coil form at the steel mill it is processed in a continuous operation to clean the steel and pass it through a bath of molten zinc which forms iron / zinc alloys and a coating of pure zinc on the surfaces of the steel which is then cooled and re-coiled. This means that the steel is galvanized before it is slit to width, cut to length, pierced and formed to shape. The coating cannot be allowed to become thick because it would split during the forming process. However, since zinc offers electro-chemical protection it will offer protection for what might be considered unprotected edges where the flat material has been cut or pierced? This is an effective and economic anti corrosion finish suitable for interior applications except where there is continual high humidity or corrosive atmosphere.

HOT DIP GALVANIZED STEEL (HDG)
Compliant with BS EN ISO 1461:2009

To achieve this finish components made from mild steel are cleaned and dipped into a bath of molten zinc after all the other manufacturing process have been completed. Not only does this ensure that the whole of the component is coated, it offers the opportunity to develop a much thicker zinc coating than is possible with pre-galvanizing. Power Solution Industries takes particular care to ensure that distortion of components is minimized during the galvanising process however, this is a hot working process and some distortion and surface roughness may be in evidence. Since the zinc thickness is far greater than that of pre-galvanized steel the anti-corrosive properties are enhanced. This finish will be suitable for most exterior installations except where there is a very aggressive atmosphere.

STAINLESS STEEL (SS)

Compliant with BS EN 10088-1:2014 & BS EN 10088-2:2014

Stainless steel differs from mild steel, in that, it contains a variety of alloyed elements, which very significantly reduce the rate at which the iron content will oxidize. The name “stainless” is a misnomer because many pollutants and chemicals will mark or stain the surface but this does not erode the strength of the steel as rusting weakens mild steel. To obtain good forming and outstanding corrosion resistance properties austenitic grades of stainless steel are used. They also have the property that they will withstand aggressive chemicals used to wash down processing areas where good hygiene is a high priority. The fact that stainless steel can maintain strength properties even when exposed to high temperature is also a valuable asset. This portfolio of useful properties makes stainless steel suitable for systems exposed to very aggressive atmospheres, including marine environments, high levels of pollution, caustic soda and temperatures of 1000deg C for periods long enough to give some integrity to electrical circuits in a fire emergency.

ANODIZED ALUMINUM

The anodized coating is hard, durable, will never peel, and, under normal conditions, will never wear through. The purpose of anodizing is to form a layer of aluminum oxide that will protect the aluminum beneath it. The aluminum oxide layer has much higher corrosion and abrasion resistance than aluminum.

Aluminum is a light & basic material for load bearing structural members of Aluminum Cable trays or ladders, made out of 6063-T6 Aluminum Extrusion, a material that economically meets the requirements of the installations. The 6063-T6 alloys have adequate strength & good corrosion resistance. It is lightweight, easy maintenance & because of the non-magnetic properties of Aluminum, keeps electrical losses to a minimum.

Compliant with BS EN ISO 12944-5:2007

Two component epoxy polyurethane coating system offering high build finishing coats for the protection of steel in corrosive environments, applied to carbon steel or hot dipped galvanized surfaces.

EPOXY POWDER COATING

These coatings are applied to carbon steel systems. The coatings can be offered in a wide variety of colors to meet architectural project requirements. The coatings themselves are resilient to damage and will withstand atmospheric pollution and ultra violet exposure from sunlight. However if the coating envelope is broken the steel substrate will have little defense to corrosive agents.

A highly decorative appearance can be achieved but longevity of this finish cannot be guaranteed

QUALITY CERTIFICATIONS

bsi.

Kitemark™ Certificate

This is to certify that: Power Solution Industries L.L.C
D 13, D Block
Phase 3, Dubai Industrial City
P O BOX: 113403
Dubai
United Arab Emirates

Holds Certificate Number: KM 662960

In respect of:
Cable Management
Cable Management, Support and Containment Systems

This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Certificate provided at or from the above address.

For and on behalf of BSI: Chris Lewis - Certification Director, Product Certification

First Issued: 2018-06-06 Effective Date: 2020-12-21
Latest Issue: 2020-12-21 Expiry Date: 2021-06-05

Page: 1 of 6

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bsi.

Kitemark™ Certificate

This is to certify that: Power Solution Industries Ltd
P.O. Box 245458
Obeikan Industrial City
Industrial Area 2
Riyadh 11312
Kingdom of Saudi Arabia

Holds Certificate Number: KM 695353

In respect of:
Cable Management
Cable Management, Support and Containment Systems

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DNV

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of
Power Solution Industries LLC.
P. O. Box: 113403, D1-DS and D13-DI17, D Block, DI Phase 3, Dubai Industrial City, Dubai, United Arab Emirates

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Manufacture and Supply of Cable Trays, Cable Ladders, Cable Trunking, Cable Support Accessories and Related Cable Management Systems for Engineering Projects. Design, Fabrication and Supply of Solar Panel Mounting Structures. Fabrication and Supply of Structural Steels.

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P.O. Box: 245458, Obeikan Industrial City, Unit No: 05, Building No: 4619, 2nd. Industrial City, New Al-Kharj Road, Riyadh 14336, Saudi Arabia,

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