SECTION: 3 **Cable Ladder**
(Hot Dip Galvanised)

- 3/50 (NEMA 16A)
- 4/70/L (NEMA 20B)
- 4/70 (NEMA 20B)
- 5/112 (NEMA 20C)
- Cable Ladder Fittings
- Cable Ladder Splice Plates
- Accessories

CABLE LADDER

(Hot Dip Galvanised)

General Description

The Kounis Metal Industries Standard Range Cable Ladder Systems were developed for use in commercial, mining and industrial plants.

It's superior support strength and open ventilation allows for the economical installation of power cables and pipe runs.

Standard construction is steel, hot dip galvanised.

A range of four types of ladder are available to cover a wide range of requirements.

Some of the features of the Kounis Standard Range Cable Ladder types 3/50 (NEMA 16A), 4/70L (NEMA 20B), 4/70 (NEMA 20B) & 5/112 (NEMA 20C) include:-

- Self splicing Bends, Risers and Tees.
- Available rail in or rail out.
- Each ladder and associated fitting has an earth hole at the ends for earthing connections.
- Rungs are channel type giving additional strength for loading.
- Ladder hold down clamp assemblies can be supplied in either standard or cyclonic type.

Fittings are supplied in 300mm inside radius in WA and 450mm inside radius in other states. For heavier power cables, 600 or 900 radius can be supplied to order.

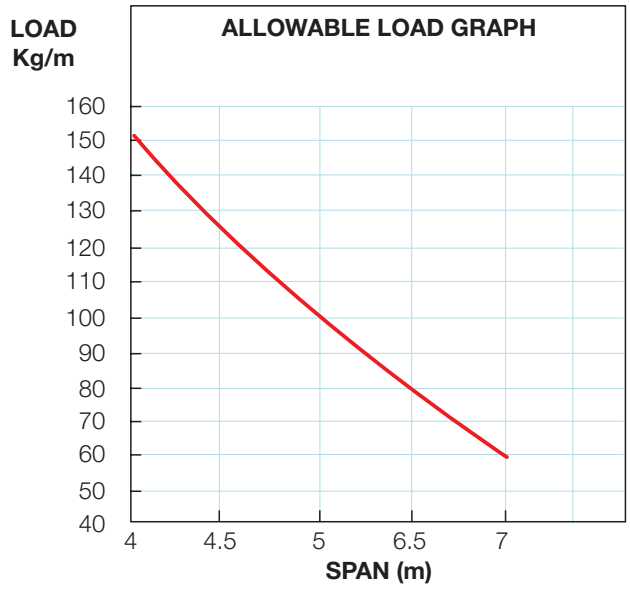
For load capacities see Cable Ladder Load Charts which also give deflections.

Tested by Curtain University to Nema VE1 Standards
Full engineering details available.

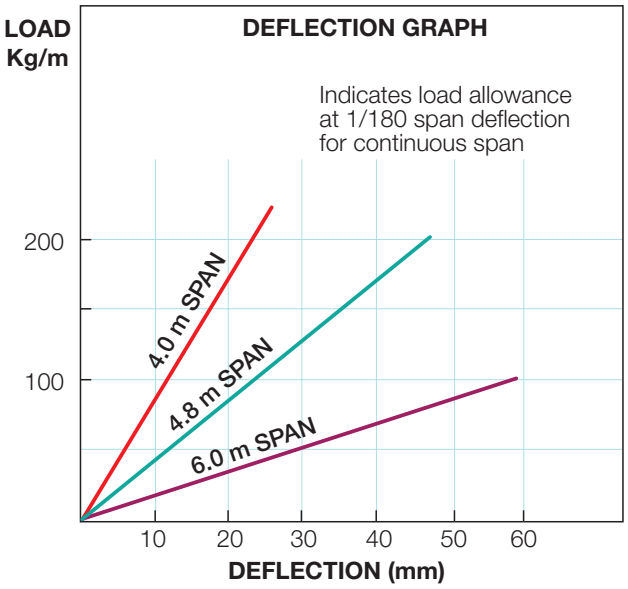
E.&O.E.

Cable Ladder **MEDIUM TO HEAVY DUTY TYPE 3/50 (NEMA 16A) 1.6mm STEEL**

(Tested by Curtin University to NEMA VE1 standards)
Full engineering details available.



Allowable loads are determined generally in accordance with NEMA requirements and verified by testing.
Safety factor = 1.5 over collapse load for single span.



Deflections shown apply to the end bays (worst case) of a continuous ladder run.
To find deflection of a single span, multiply by 2.5.

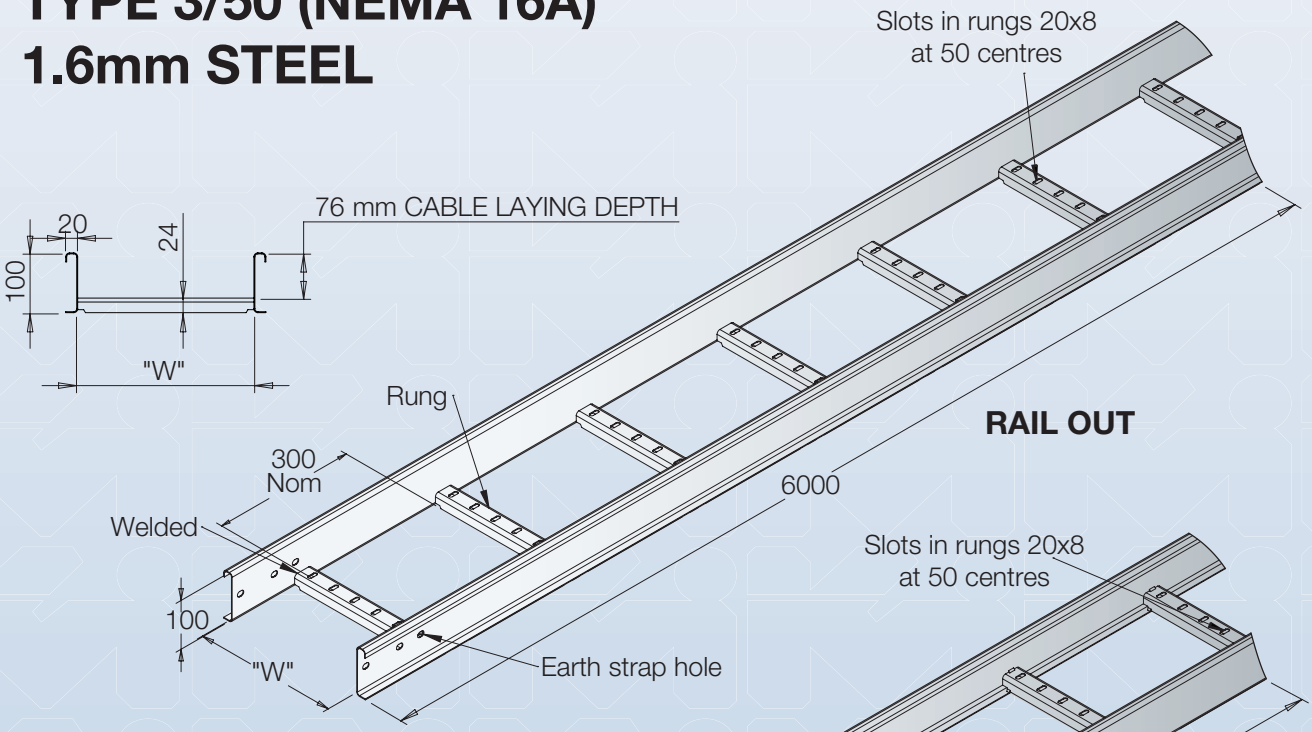
SPECIFICATION

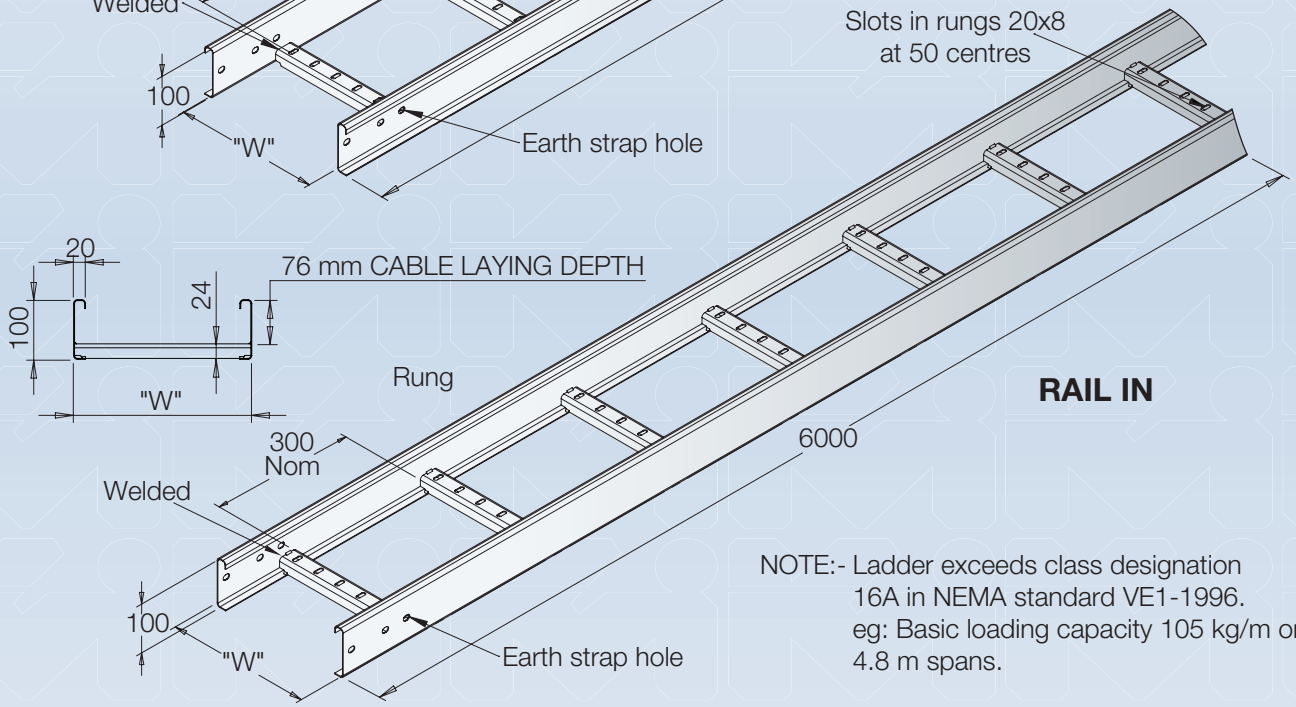
Class designation:	Cable Ladder-medium to heavy duty type 3/50 NEMA classification 16A.
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication to AS/NZS 4680 i.e. 390 gm/m² zinc, approx, 55µm.
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	76 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates.
Stock widths:	150 mm, 300 mm, 450 mm & 600 mm standard other widths available by request.
Fittings:	A full range of fittings are available e.g. bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings, barrier strips and hold down clamps.

E.&O.E.

KOUNIS Metal Industries

Cable Ladder **MEDIUM TO HEAVY DUTY TYPE 3/50 (NEMA 16A) 1.6mm STEEL**





NOTE:- Ladder exceeds class designation 16A in NEMA standard VE1-1996. eg: Basic loading capacity 105 kg/m on 4.8 m spans.

STANDARD WIDTH "W"	CODE RAIL IN	CODE RAIL OUT
150	3CL15	3CL15/RO
300	3CL30	3CL30/RO
450	3CL45	3CL45/RO
600	3CL60	3CL60/RO

NOTE:- For ladders side by side allow clearance for splice plates and fixings.

ORDERING INFORMATION

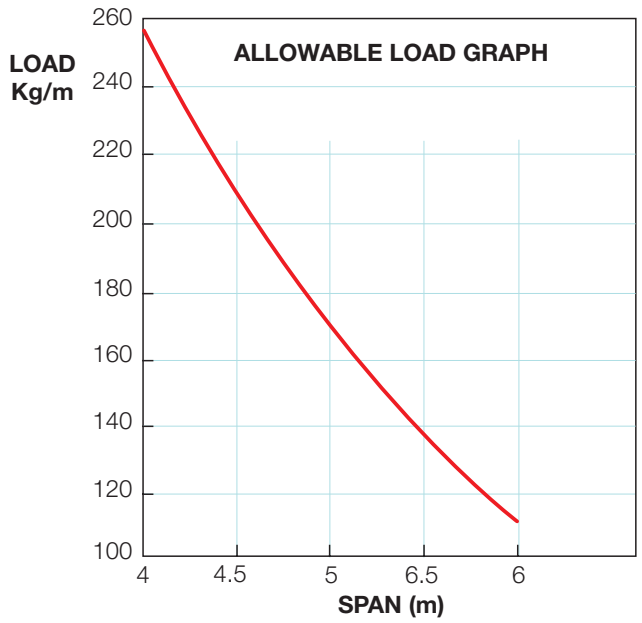
3 CL 15 RO

- RO — RAIL DIRECTION e.g. (RO = Rail Out) EAST COAST ONLY
- 15 — SIZE e.g. 15 (150 mm)
- CL — CABLE LADDER
- 3 — LADDER TYPE 3=3/50

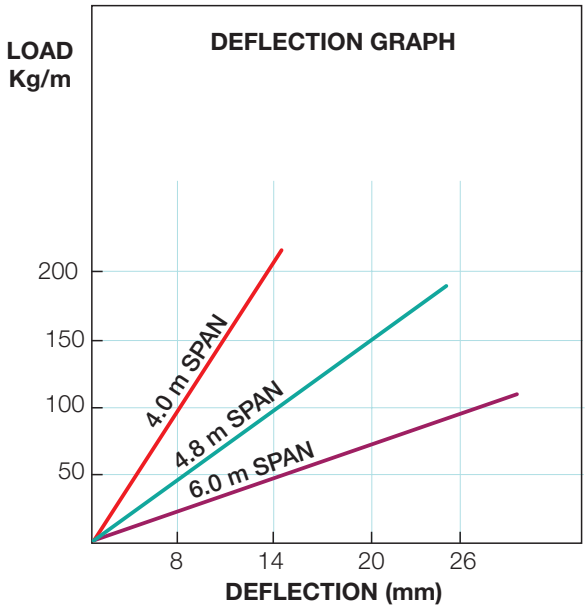
E.&O.E.

Cable Ladder **HEAVY DUTY TYPE 4/70L (NEMA 20B) 1.6mm STEEL**

(Tested by Curtin University to NEMA VE1 standards)
Full engineering details available.



Allowable loads are determined generally in accordance with NEMA requirements and verified by testing.
Safety factor = 1.5 over collapse load for single span.



Deflections shown apply to the end bays (worst case) of a continuous ladder run.
To find deflection of a single span, multiply by 2.5.

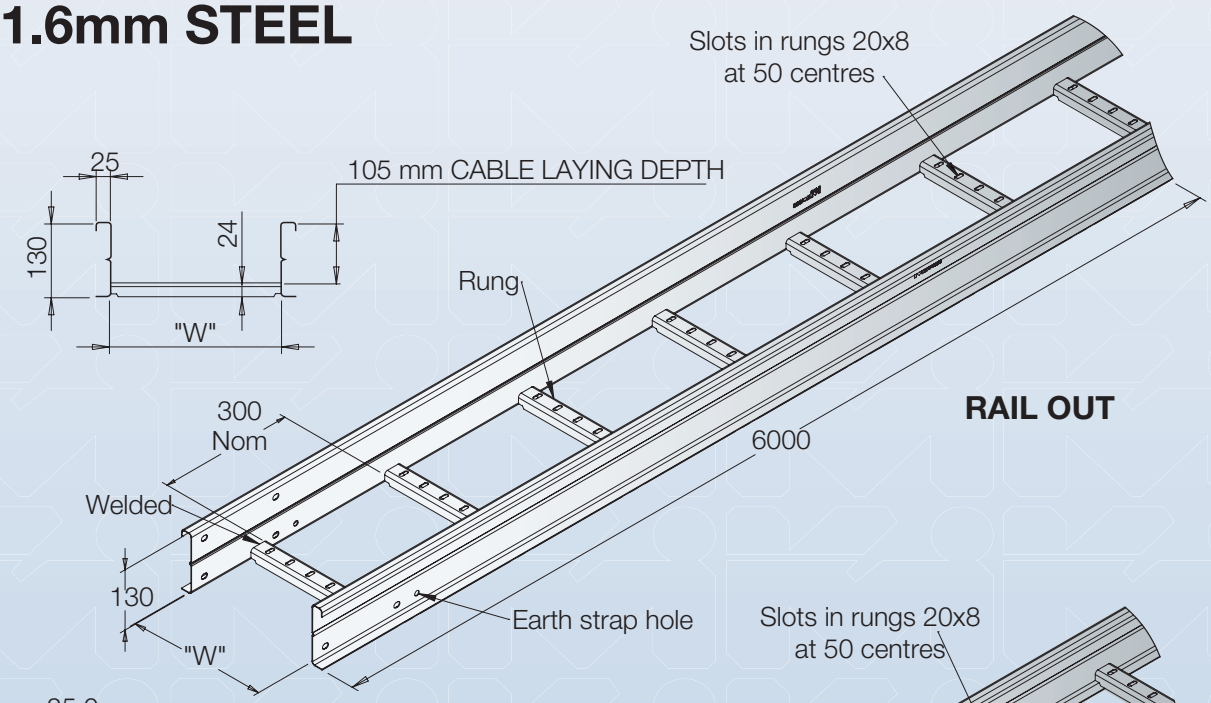
Specification

Class designation:	Cable Ladder-heavy duty type 4/70L NEMA classification 20B.
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication. AS/NZS 4680 i.e. 390 gm/m² zinc, approx, 55 µm.
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	105 mm cable laying depth.
Stock length:	6000 mm standard , joining together by full strength splice plates.
Stock widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends,risers,tees,crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings, barrier strips and hold down clamps.

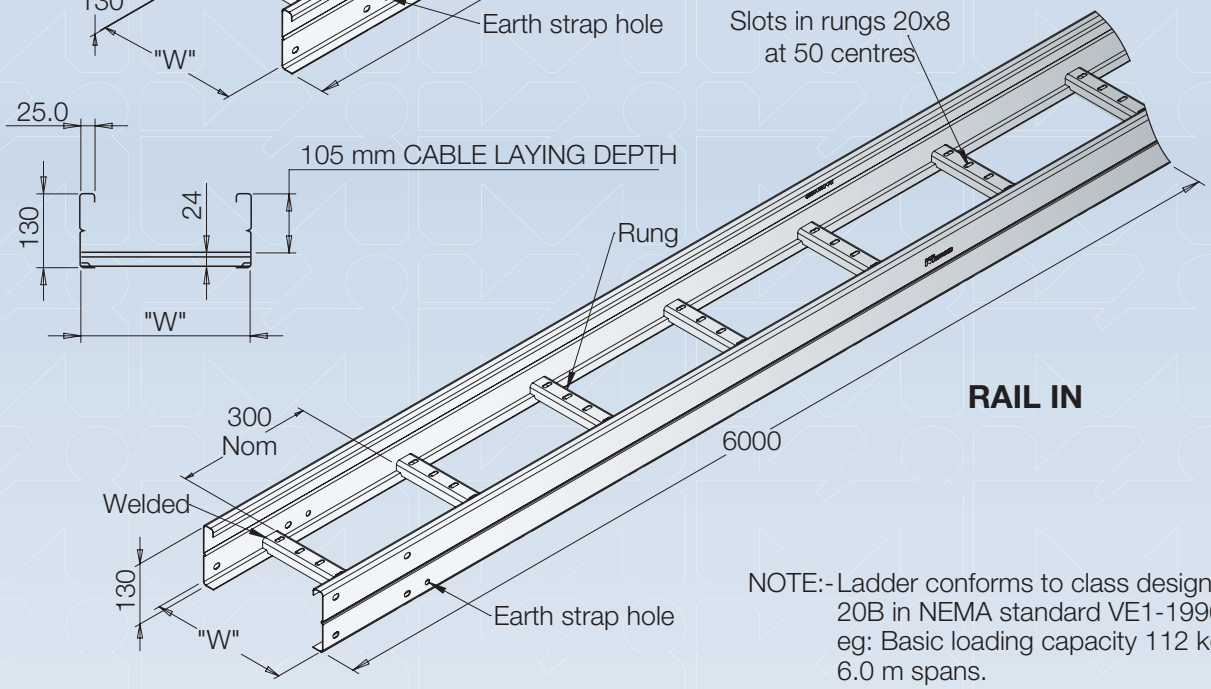
E.&O.E.

KOUNIS Metal Industries

Cable Ladder **HEAVY DUTY TYPE 4/70L (NEMA 20B) 1.6mm STEEL**



RAIL OUT



RAIL IN

NOTE:- Ladder conforms to class designation 20B in NEMA standard VE1-1996.
eg: Basic loading capacity 112 kg/m on 6.0 m spans.

STANDARD WIDTH "W"	CODE RAIL IN	CODE RAIL OUT
150	4CLL15	4CLL15/RO
300	4CLL30	4CLL30/RO
450	4CLL45	4CLL45/RO
600	4CLL60	4CLL60/RO

NOTE:- For ladders side by side allow clearance for splice plates and fixings.

ORDERING INFORMATION

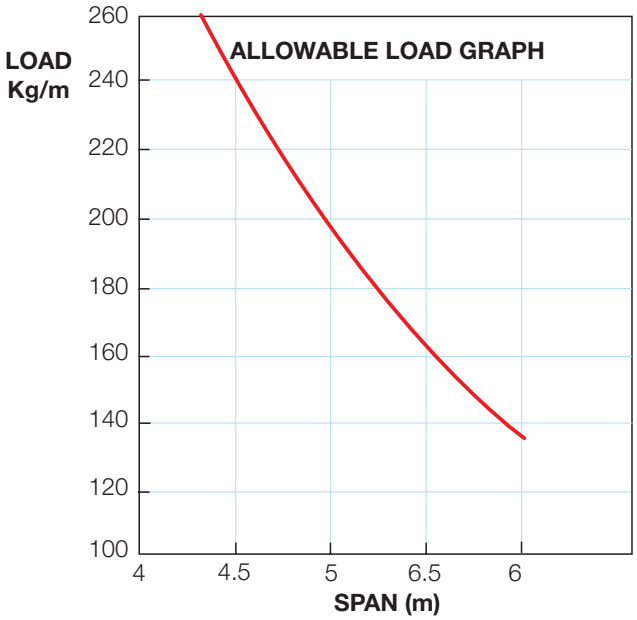
4 CLL 15 RO

- RO — RAIL DIRECTION
  e.g. (RO = Rail Out)
  EAST COAST ONLY
- 15 — SIZE
  e.g. 15 (150 mm)
- CLL — CABLE LADDER 1.6 mm
- 4 — LADDER TYPE
  4 = 4/70

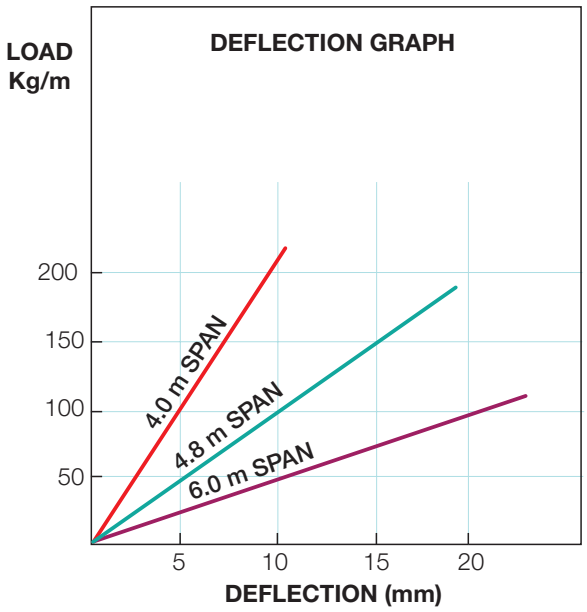
E.&O.E.

Cable Ladder **HEAVY DUTY TYPE 4/70 (NEMA 20B) 2mm STEEL**

(Tested by Curtin University to NEMA VE1 standards)
Full engineering details available.



Allowable loads are determined generally in accordance with NEMA requirements and verified by testing.
Safety factor = 1.5 over collapse load for single span.



Deflections shown apply to the end bays (worst case) of a continuous ladder run.
To find deflection of a single span, multiply by 2.5.

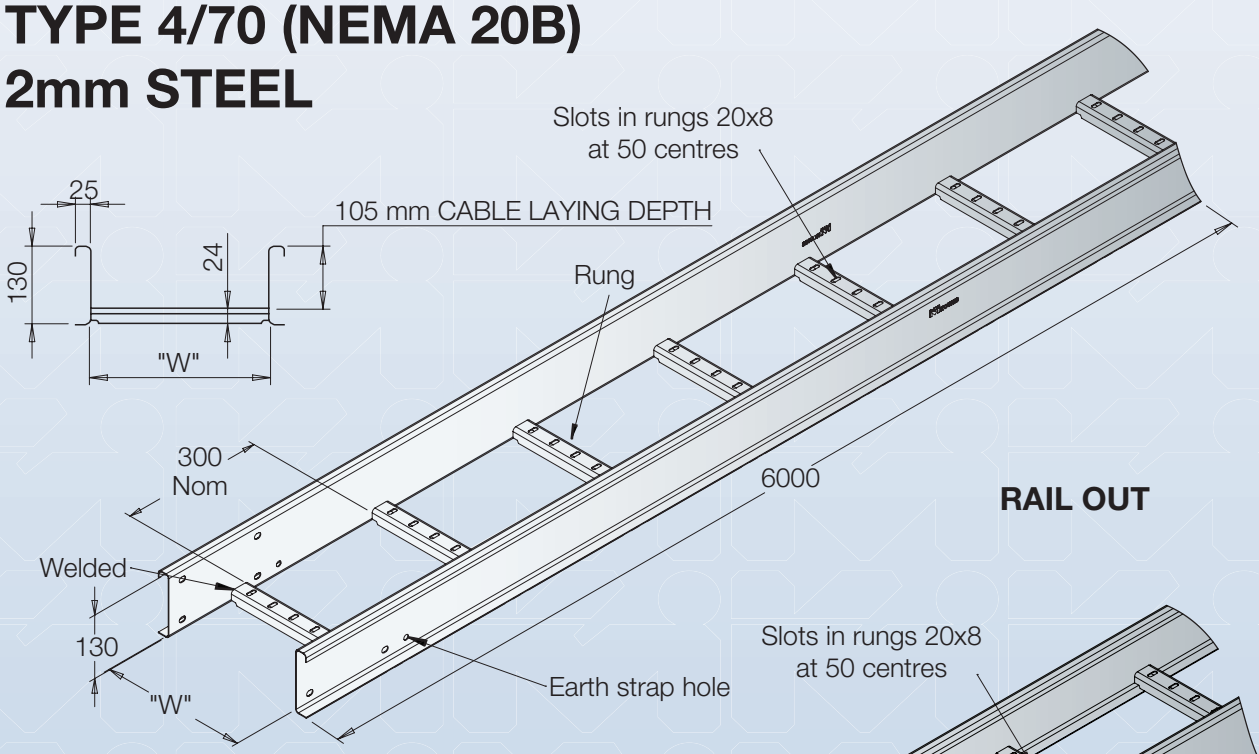
Specification

Class designation:	Cable Ladder-heavy duty type 4/70 NEMA classification 20B.
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication to AS/NZS 4680 i.e. 390 gm/m² zinc, approx, 55 µm.
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	105 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates.
Stock widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings, barrier strips and hold down clamps

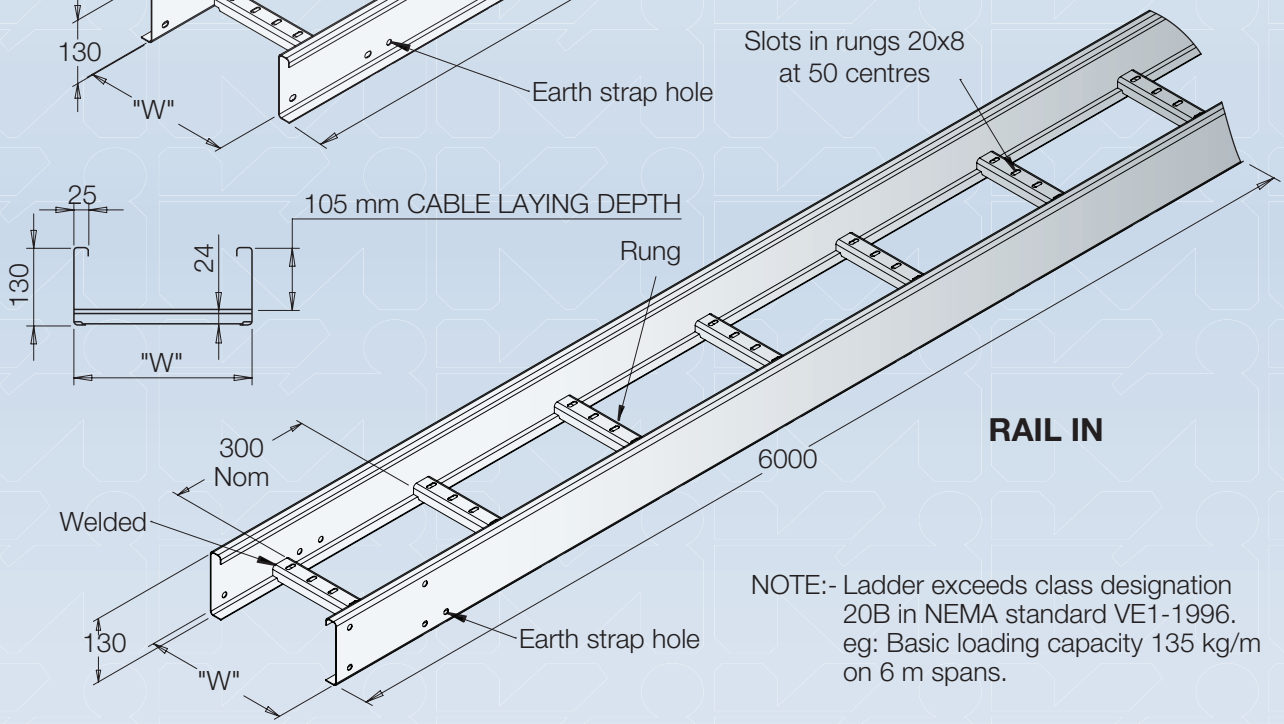
E.&O.E.

KOUNIS Metal Industries

Cable Ladder **HEAVY DUTY TYPE 4/70 (NEMA 20B) 2mm STEEL**



RAIL OUT



RAIL IN

NOTE:- Ladder exceeds class designation 20B in NEMA standard VE1-1996. eg: Basic loading capacity 135 kg/m on 6 m spans.

STANDARD WIDTH "W"	CODE RAIL IN	CODE RAIL OUT
150	4CL15	4CL15/RO
300	4CL30	4CL30/RO
450	4CL45	4CL45/RO
600	4CL60	4CL60/RO

NOTE:- For ladders side by side allow clearance for splice plates and fixings.

ORDERING INFORMATION

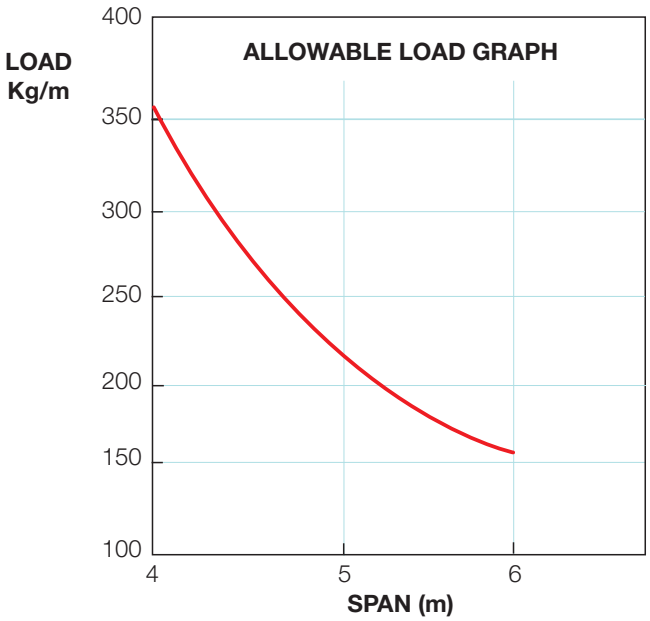
4 CL 15 RO

- RAIL DIRECTION
  e.g. (RO = Rail Out)
  EAST COAST ONLY
- SIZE
  e.g. 15 (150 mm)
- CABLE LADDER 2.0 mm
- LADDER TYPE
  4 = 4/70

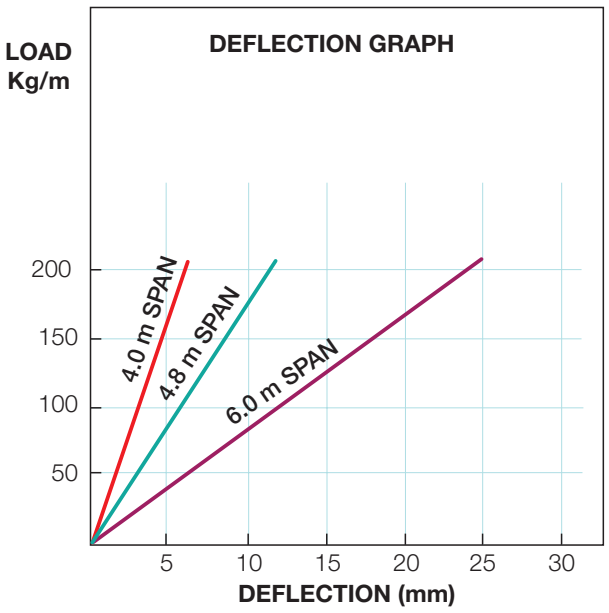
E.&O.E.

Cable Ladder **HEAVY DUTY TYPE 5/112 (NEMA 20C) 2mm STEEL**

(Tested by Curtin University to NEMA VE1 standards)
Full engineering details available.



Allowable loads are determined generally in accordance with NEMA requirements and verified by testing.
Safety factor = 1.5 over collapse load for single span.



Deflections shown apply to the end bays (worst case) of a continuous ladder run.
To find deflection of a single span, multiply by 2.5.

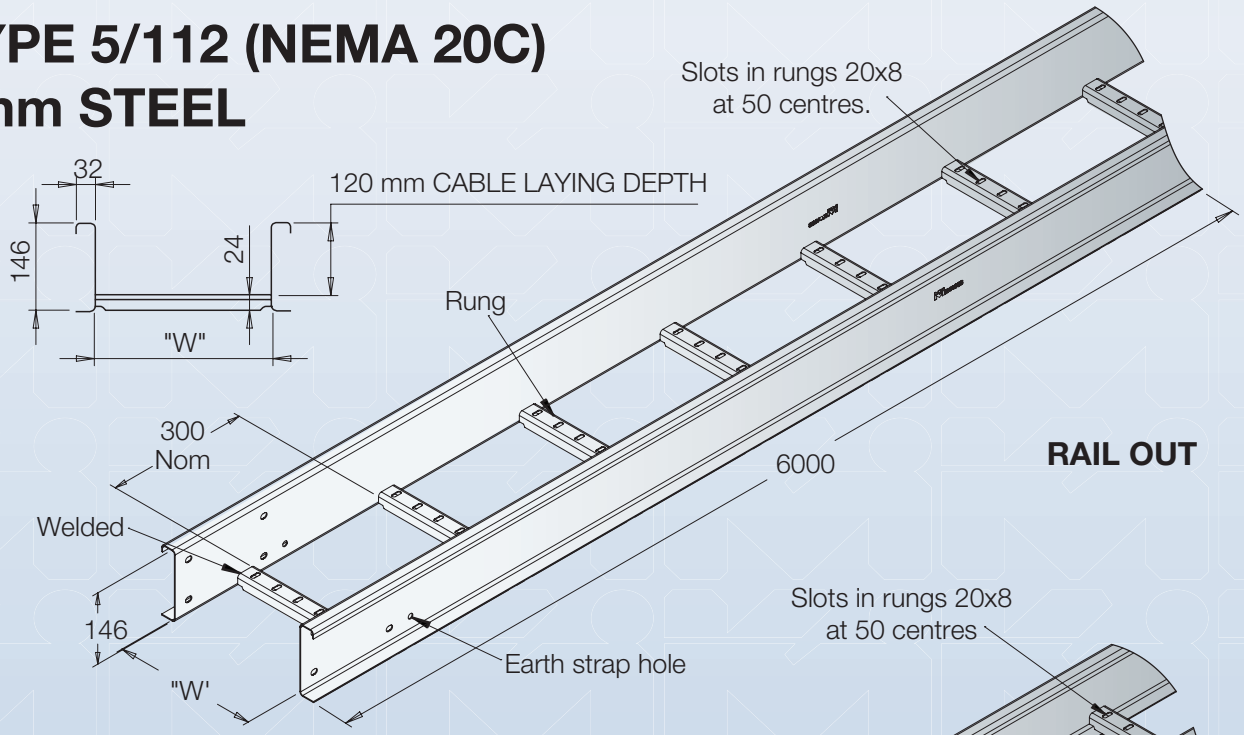
Specification

Class designation:	Cable Ladder-heavy duty type 5/112.
Material:	Steel sheet.
Finish:	Hot dipped galvanised after fabrication to AS/NZS 4680 ie 390 gm/m² zinc, approx, 55 µm.
Rung spacing:	300 mm spacings with slotted rungs standard.
Inside depth:	120 mm cable laying depth.
Stock length:	6000 mm standard, joining together by full strength splice plates.
Stock widths:	150 mm, 300 mm, 450 mm & 600 mm standard.
Fittings:	A full range of fittings are available e.g bends, risers, tees, crosses & reducers.
Radius:	300 mm radius standard for rail in. 450 mm radius standard for rail out. Other radii available by request.
Accessories:	Flat or peak covers available for ladders & fittings, barrier strips and hold down clamps.

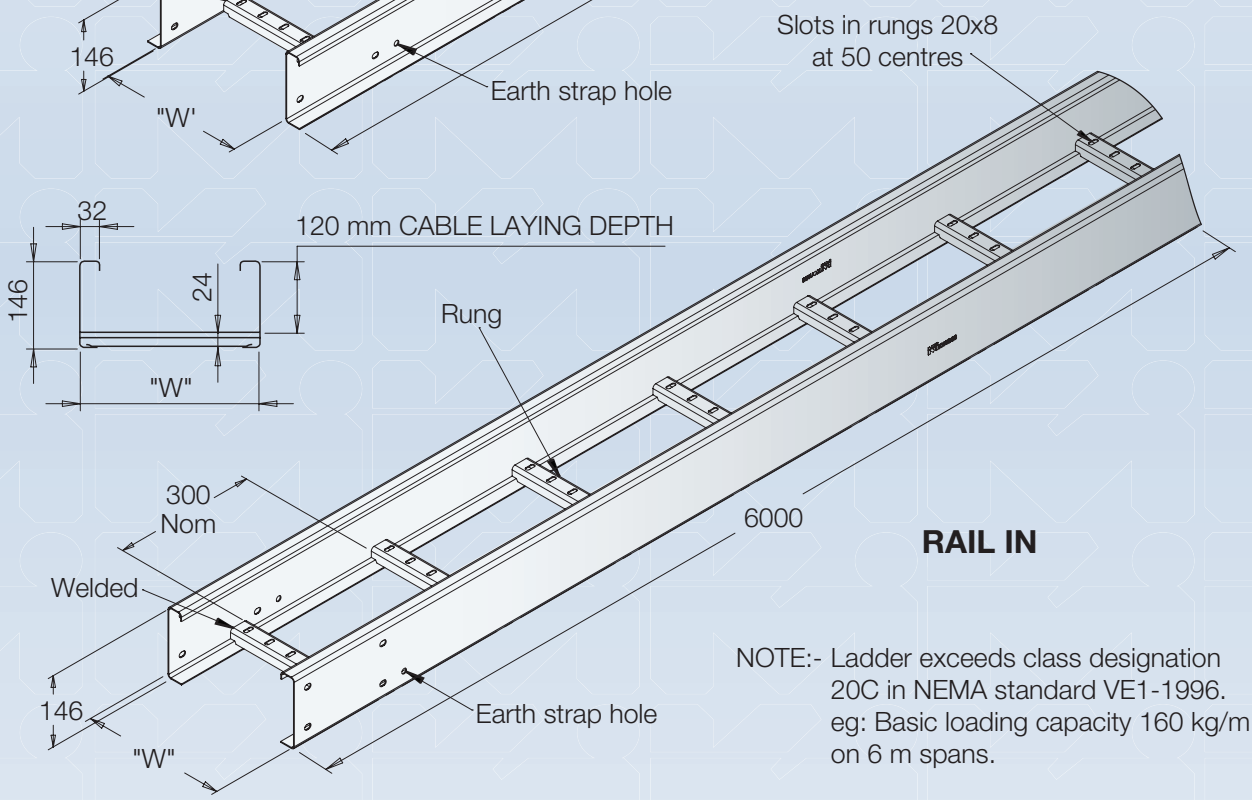
E.&O.E.

KOUNIS Metal Industries

Cable Ladder **HEAVY DUTY TYPE 5/112 (NEMA 20C) 2mm STEEL**



RAIL OUT



RAIL IN

NOTE:- Ladder exceeds class designation 20C in NEMA standard VE1-1996. eg: Basic loading capacity 160 kg/m on 6 m spans.

STANDARD WIDTH "W"	CODE RAIL IN	CODE RAIL OUT
150	5CL15	5CL15/RO
300	5CL30	5CL30/RO
450	5CL45	5CL45/RO
600	5CL60	5CL60/RO

NOTE:- For ladders side by side allow clearance for splice plates and fixings.

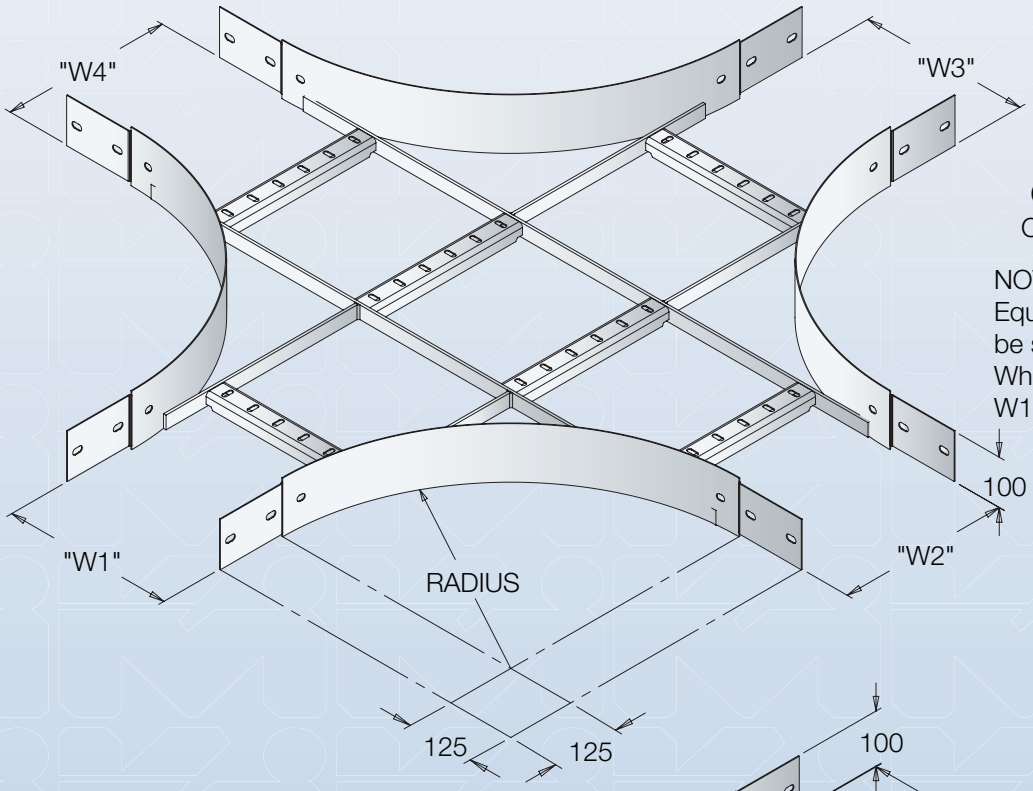
ORDERING INFORMATION

5 CL 15 RO

- RO — RAIL DIRECTION e.g. (RO = Rail Out) EAST COAST ONLY
- 15 — SIZE e.g. 15 (150 mm)
- CL — CABLE LADDER 2.0 mm
- 5 — LADDER TYPE 5 = 5/112

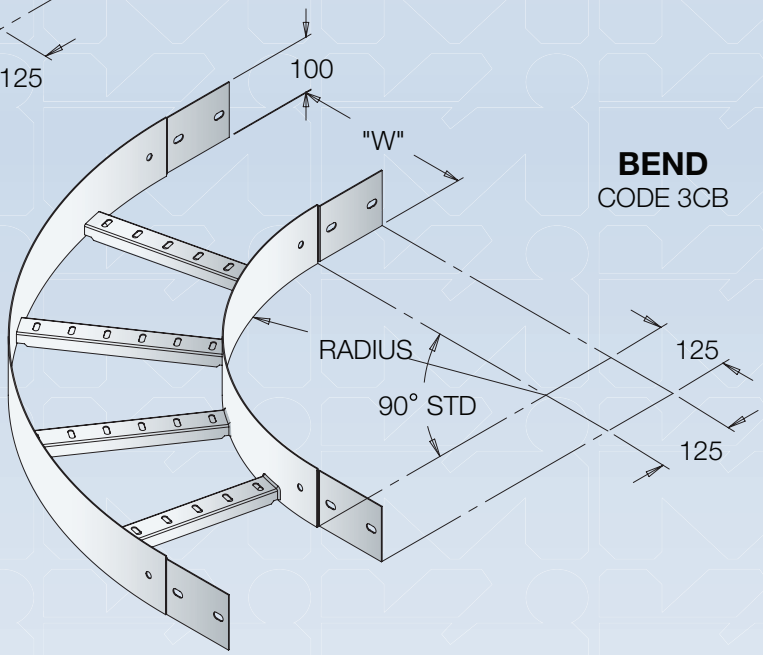
E.&O.E.

Cable Ladder **FITTINGS**



CROSS
CODE 3CC

NOTE:-
Equal or unequal crosses can be supplied.
When ordering state widths W1 X W2 X W3 X W4



BEND
CODE 3CB

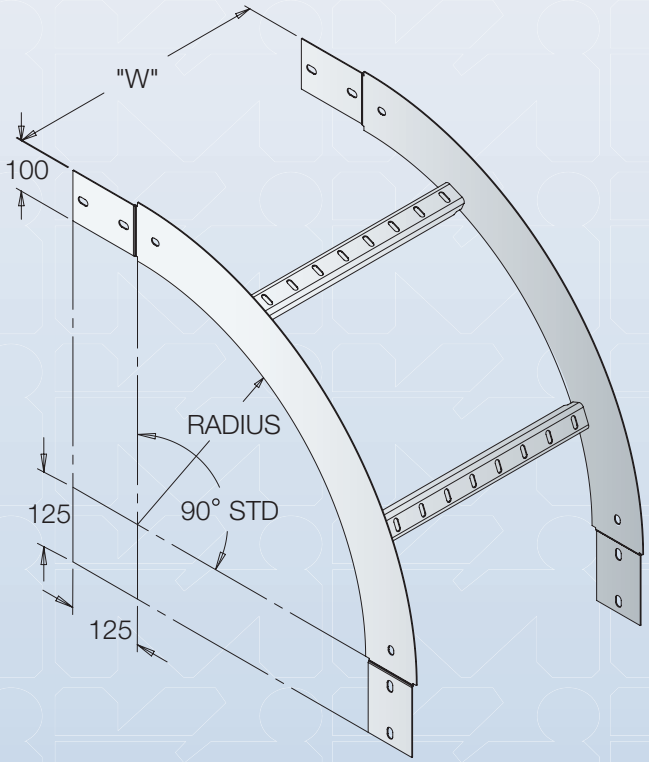
ORDERING INFORMATION

3 C B S 15 3

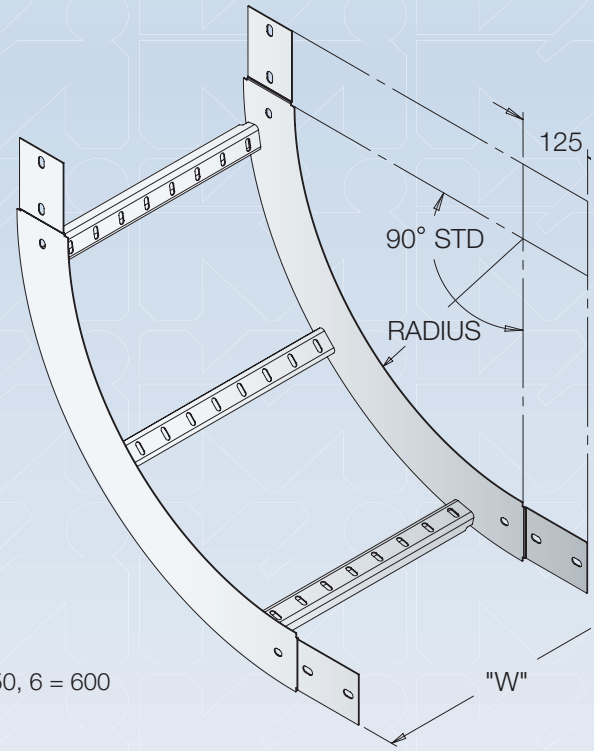
- 3 — LADDER TYPE
  3 = 3/50
- C — CABLE LADDER
- B — FITTING TYPE
  B = Bend
  C = Cross
- S = Stainless Steel
- 15 — FITTING WIDTH
  e.g. 15 (150 mm)
- 3 — RADIUS
  3 = 300, 4 = 450, 6 = 600

E.&O.E.

Cable Ladder **FITTINGS**



EXTERNAL RISER
CODE 3CRX



INTERNAL RISER
CODE 3CRI

ORDERING INFORMATION

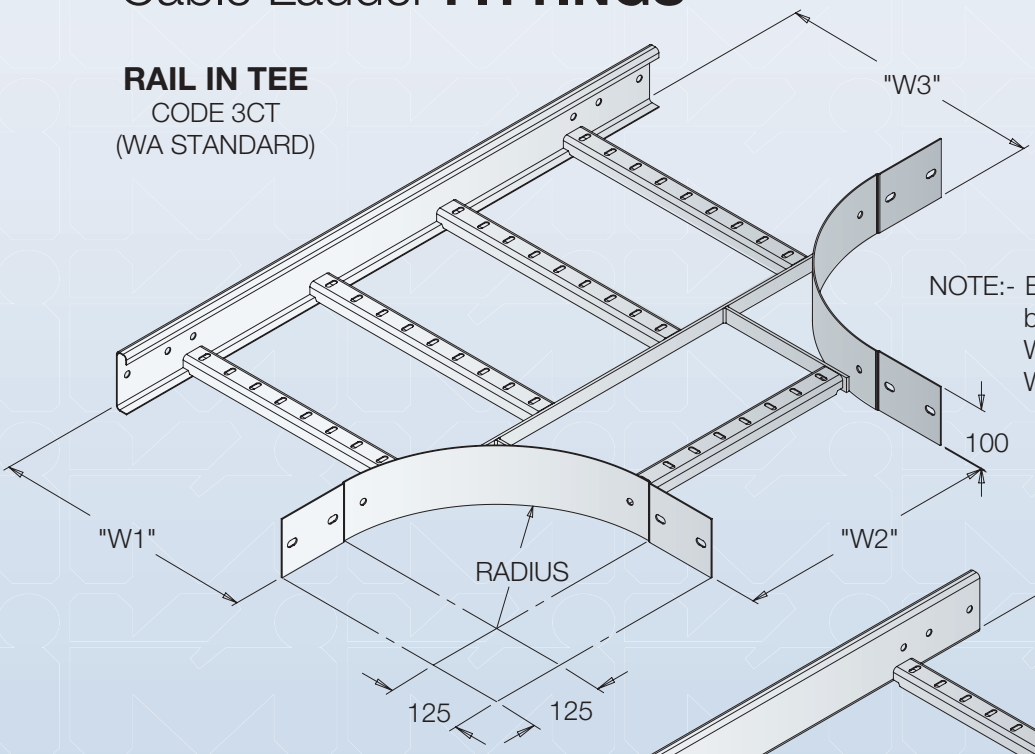
3 C RX S 15 3

- 3 — RADIUS
  3 = 300, 4 = 450, 6 = 600
- 15 — FITTING WIDTH
  e.g. 15 (150 mm)
- S — S = Stainless Steel
- RX — FITTING TYPE
  RX = External Riser
  RI = Internal Riser
- C — CABLE LADDER
- 3 — LADDER TYPE
  3 = 3/50

E.&O.E.

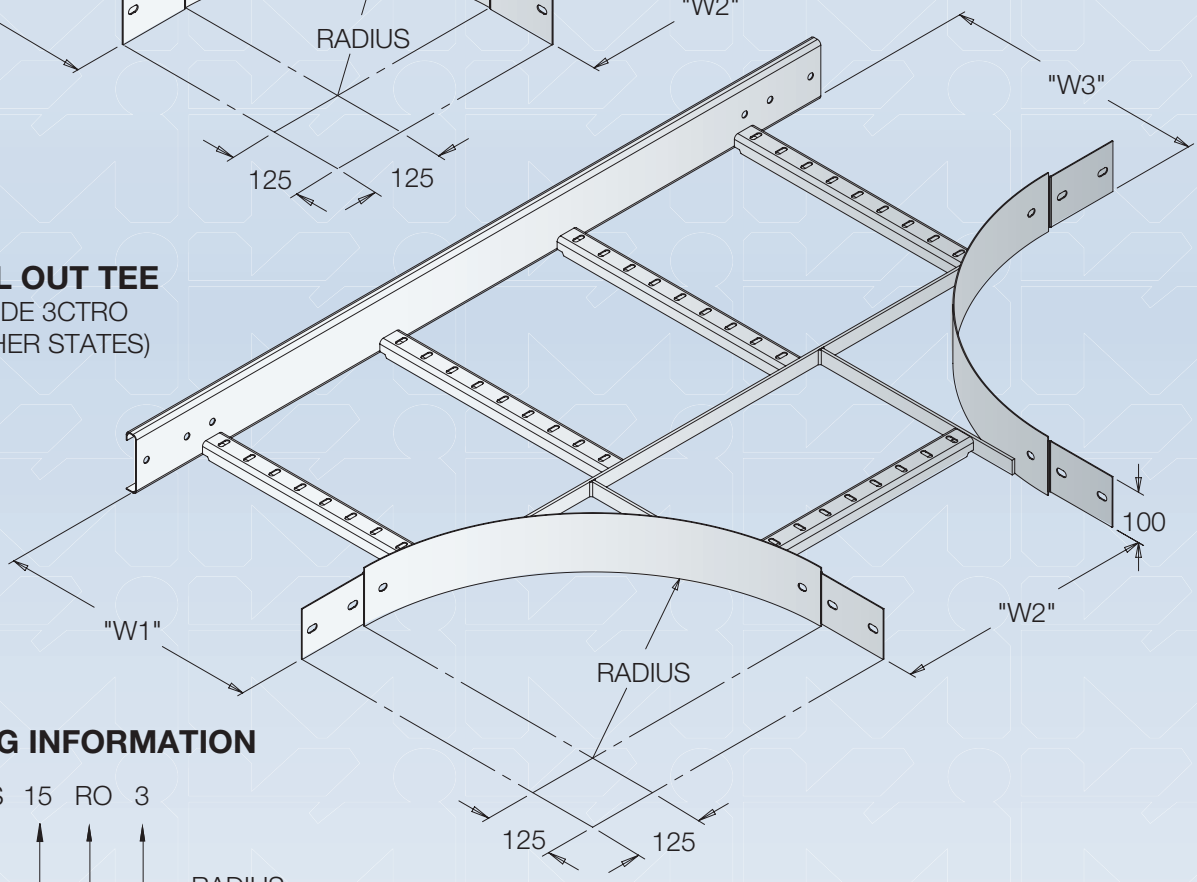
Cable Ladder **FITTINGS**

RAIL IN TEE
CODE 3CT
(WA STANDARD)



NOTE:- Equal or unequal tees can be supplied.
When ordering state widths W1 X W2 X W3

RAIL OUT TEE
CODE 3CTRO
(OTHER STATES)



ORDERING INFORMATION

3 C T S 15 RO 3

- RADIUS
  3 = 300, 4 = 450, 6 = 600
- RAIL DIRECTION
  e.g. (RO = Rail Out)
  EAST COAST ONLY
- FITTING WIDTH
  e.g. 15 (150 mm)
- S = Stainless Steel
- FITTING TYPE
  T= Tee
- CABLE LADDER
- LADDER TYPE
  3 = 3/50

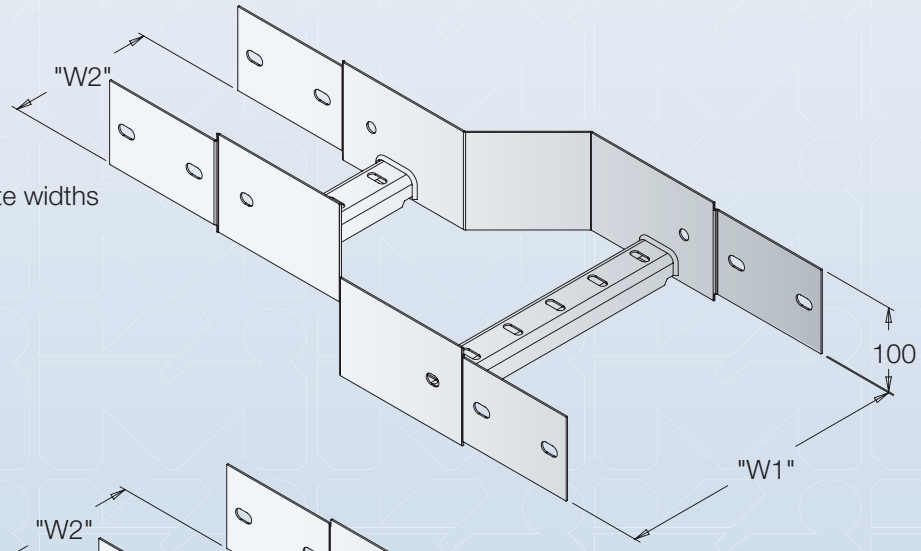
E.&O.E.

Cable Ladder **FITTINGS**

STRAIGHT REDUCER

CODE 3CSR

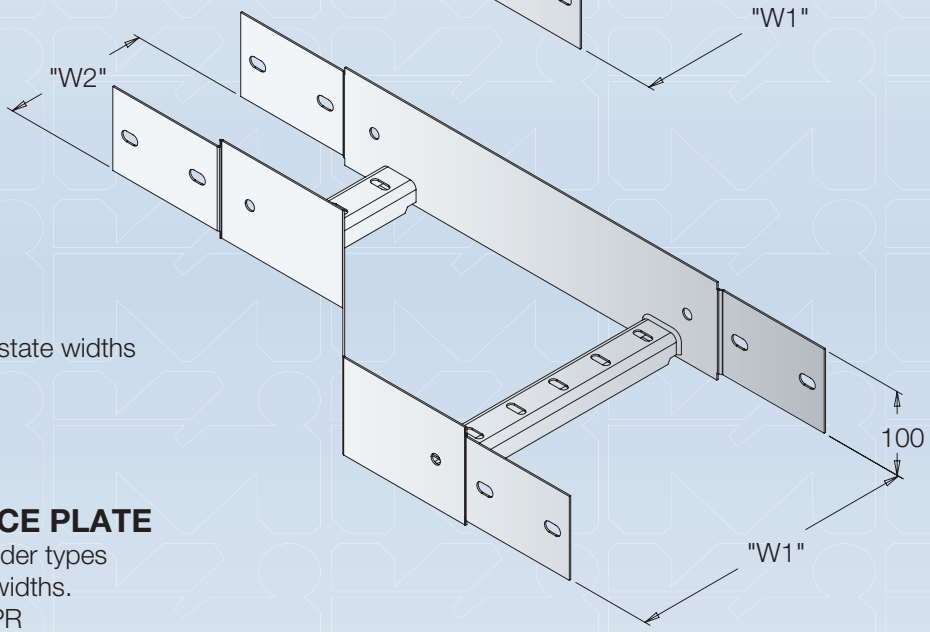
NOTE:-
When ordering state widths
W1 X W2



OFFSET REDUCER

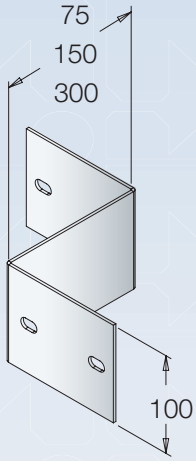
(RIGHT HAND SHOWN)
CODE 3CRR

NOTE:-
When ordering state widths
W1 X W2



REDUCING SPLICE PLATE

Available for all ladder types
and reduction widths.
CODE 3CPR



ORDERING INFORMATION

3 C SR S W1 x W2

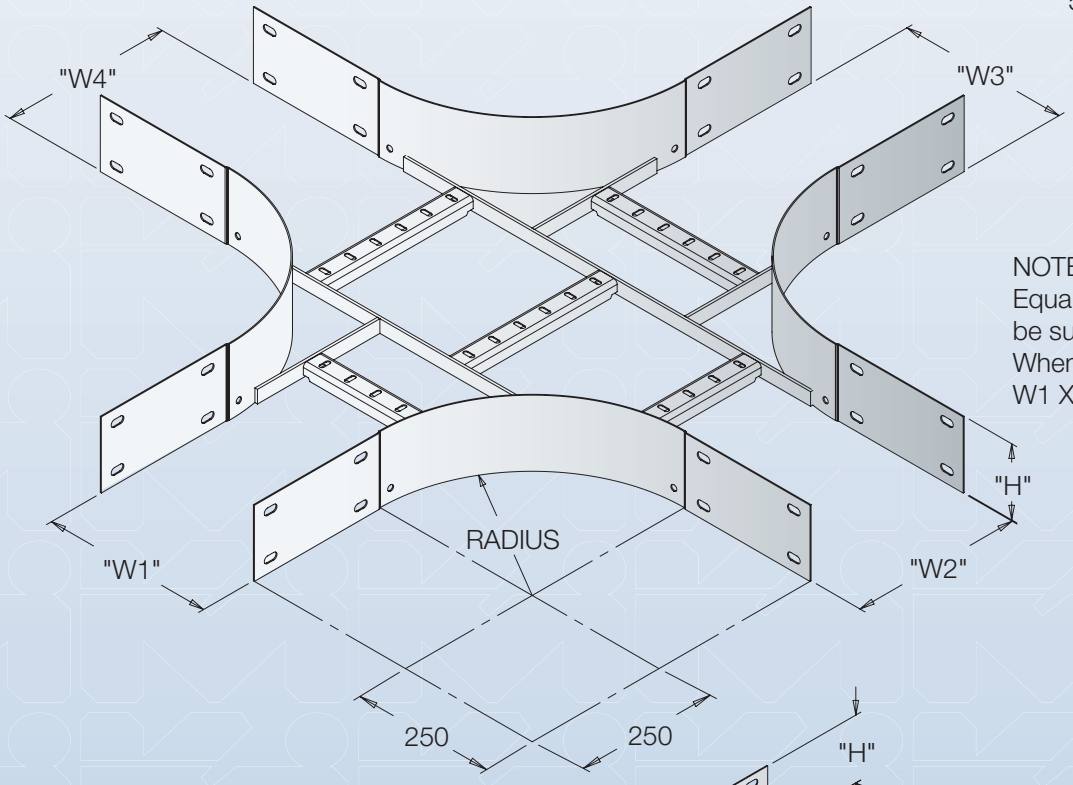
- W1 x W2 — WIDTH 1 (i.e. 150 mm) WIDTH 2 (i.e. 300 mm)
- S — S = Stainless Steel
- SR — FITTING TYPE
  - PR = Reducing Splice Plate (i.e. 75 mm, 150 mm, 300 mm)
  - SR = Straight Reducer
  - RR = Right Hand Reducer
  - LR = Left Hand Reducer
- C — CABLE LADDER
- 3 — LADDER TYPE
  - 3 = 3/50

E.&O.E.

Cable Ladder **FITTINGS**

"H"

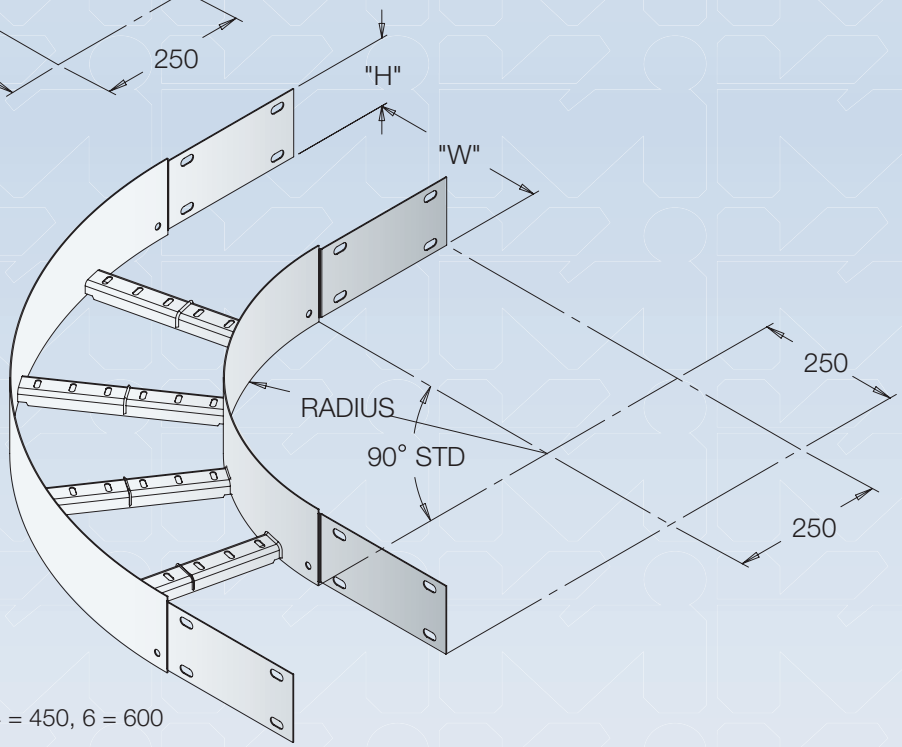
4/70 20B	130 mm
5/112 20C	146 mm



CROSS
CODE 4CC

NOTE:-
Equal or unequal crosses can be supplied.
When ordering state widths W1 X W2 X W3 X W4

BEND
CODE 4CB



ORDERING INFORMATION

4 C C S 15 3

- RADIUS
  3 = 300, 4 = 450, 6 = 600
- FITTING WIDTH
  e.g. 15 (150 mm)
- S = Stainless Steel
- FITTING TYPE
  C = Cross (W1 x W2 x W3 x W4)
  B = Bend
- CABLE LADDER
- LADDER TYPE
  4 = 4/70
  5 = 5/112

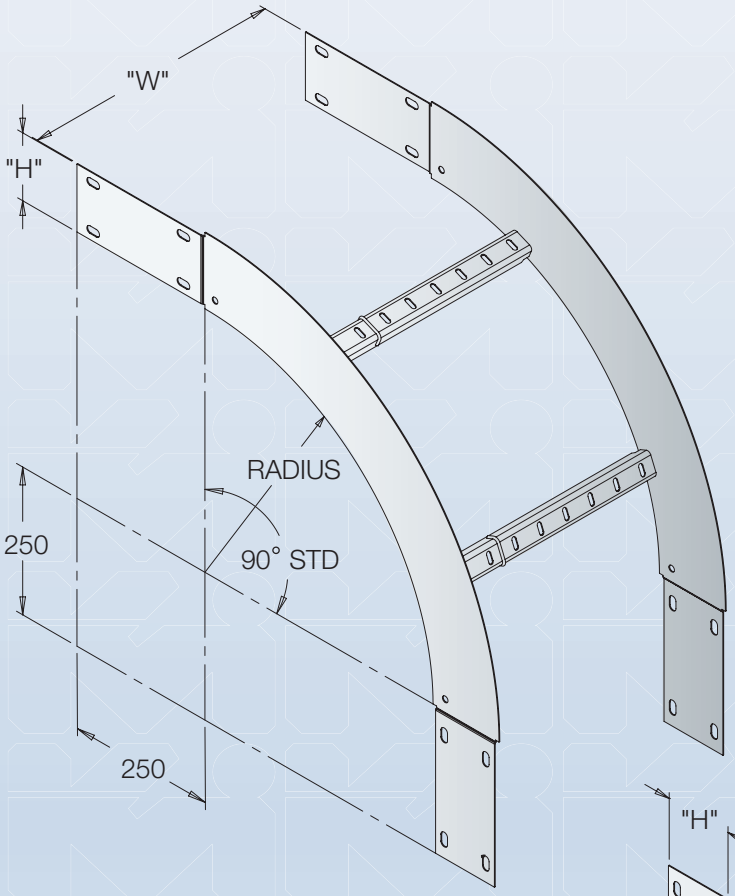
E.&O.E.

KOUNIS Metal Industries

Cable Ladder **FITTINGS**

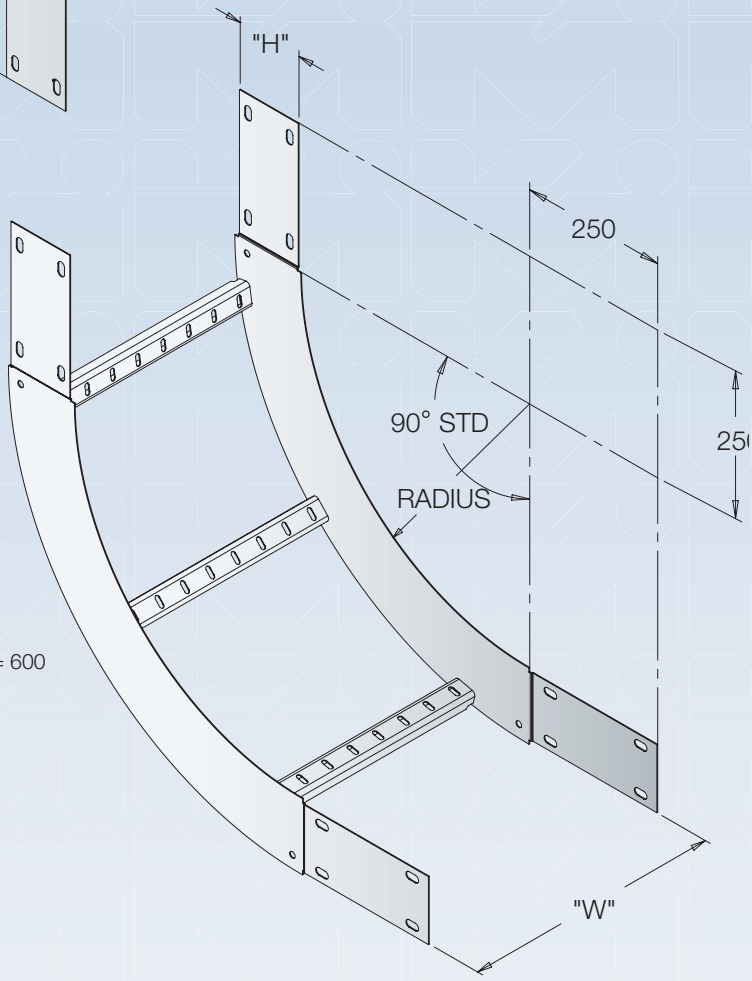
"H"

4/70 20B	130 mm
5/112 20C	146 mm



EXTERNAL RISER
CODE: 4CRX

INTERNAL RISER
CODE: 4CRI



ORDERING INFORMATION

4 C RX S 15 3

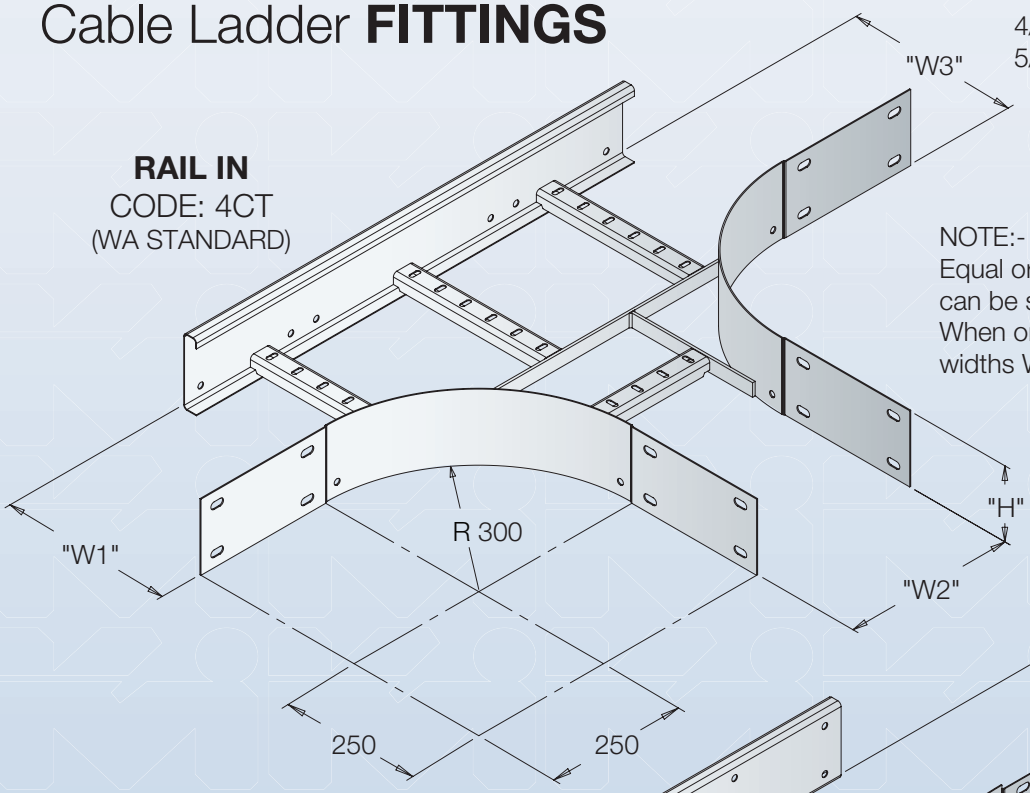
- RADIUS
  3 = 300, 4 = 450, 6 = 600
- FITTING WIDTH
  e.g. 15 (150 mm)
- S = Stainless Steel
- FITTING TYPE
  RX = External Riser
  RI = Internal Riser
- CABLE LADDER
- LADDER TYPE
  4 = 4/70
  5 = 5/112

E.&O.E.

Cable Ladder **FITTINGS**

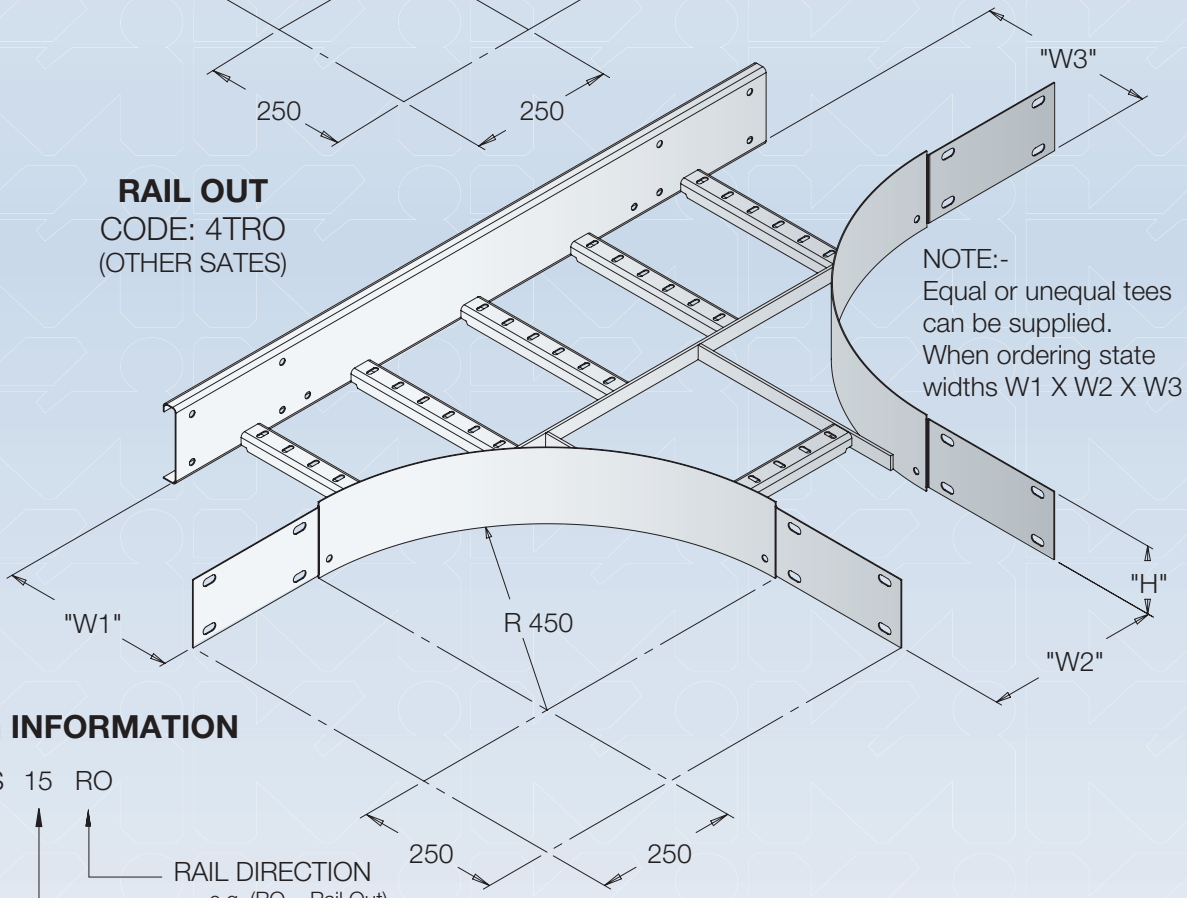
"H"
4/70 20B 130 mm
5/112 20C 146 mm

RAIL IN
CODE: 4CT
(WA STANDARD)



NOTE:-
Equal or unequal tees can be supplied.
When ordering state widths W1 X W2 X W3

RAIL OUT
CODE: 4TRO
(OTHER SATES)



NOTE:-
Equal or unequal tees can be supplied.
When ordering state widths W1 X W2 X W3

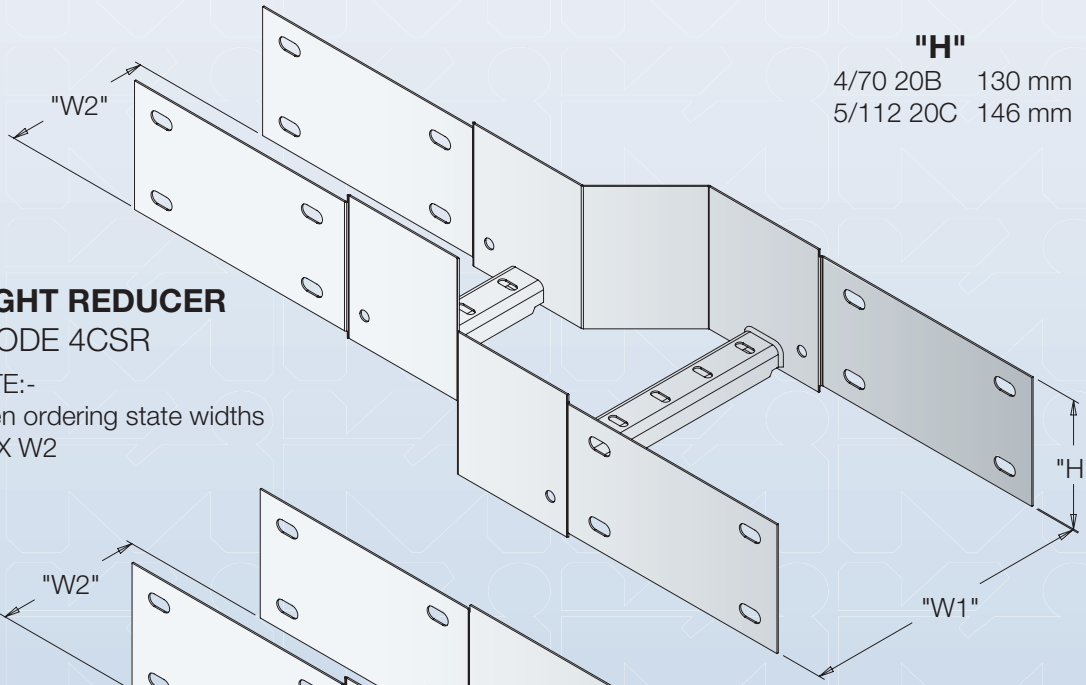
ORDERING INFORMATION

4 C T S 15 RO

- RO — RAIL DIRECTION
  e.g. (RO = Rail Out)
  EAST COAST ONLY
- 15 — FITTING WIDTH
  e.g. 15 (150 mm)
- S = Stainless Steel
- T — FITTING TYPE
  T = TEE
- C — CABLE LADDER
- 4 — LADDER TYPE
  4 = 4/70
  5 = 5/112

E.&O.E.

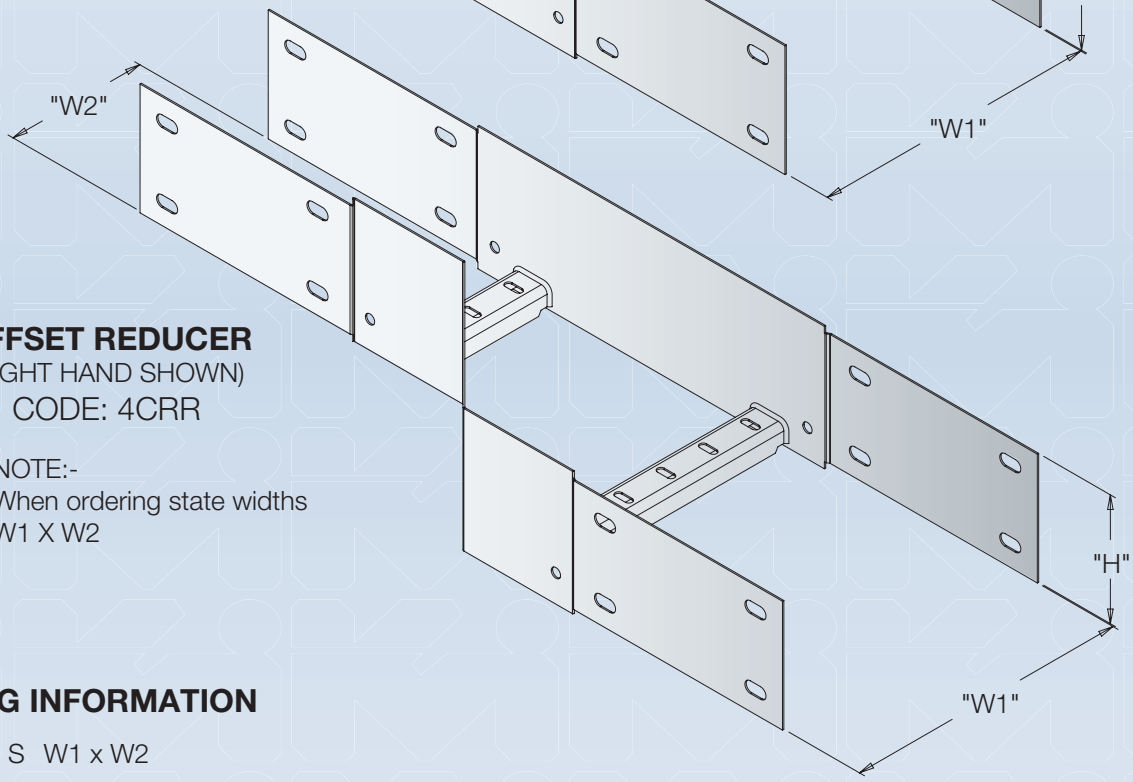
Cable Ladder **FITTINGS**



"H"
4/70 20B 130 mm
5/112 20C 146 mm

STRAIGHT REDUCER
CODE 4CSR

NOTE:-
When ordering state widths
W1 X W2



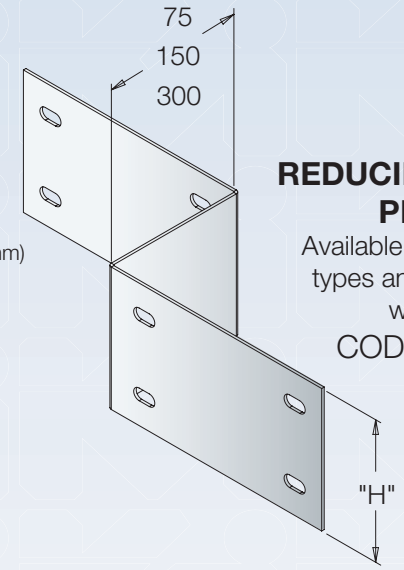
OFFSET REDUCER
(RIGHT HAND SHOWN)
CODE: 4CRR

NOTE:-
When ordering state widths
W1 X W2

ORDERING INFORMATION

4 C SR S W1 x W2

- W1 x W2 — WIDTH 1 (i.e. 150 mm) WIDTH 2 (i.e. 300 mm)
- S — S = Stainless Steel
- SR — FITTING TYPE
  - PR = Reducing Splice Plate (i.e. 75 mm, 150 mm, 300 mm)
  - SR = Straight Reducer
  - RR = Right Hand Reducer
  - LR = Left Hand Reducer
- C — CABLE LADDER
- 4 — LADDER TYPE
  - 4 = 4/70
  - 5 = 5/112

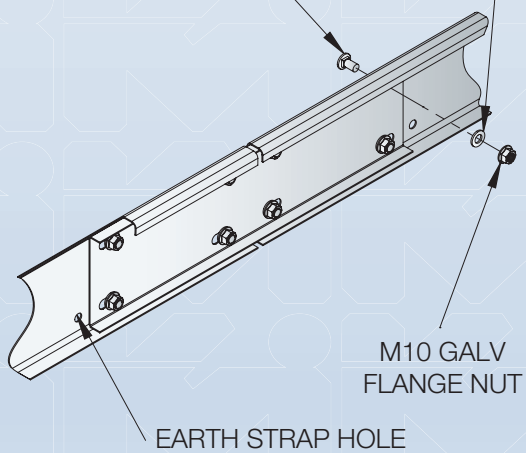


REDUCING SPLICE PLATE
Available for all ladder types and reduction widths.
CODE: 4CPR

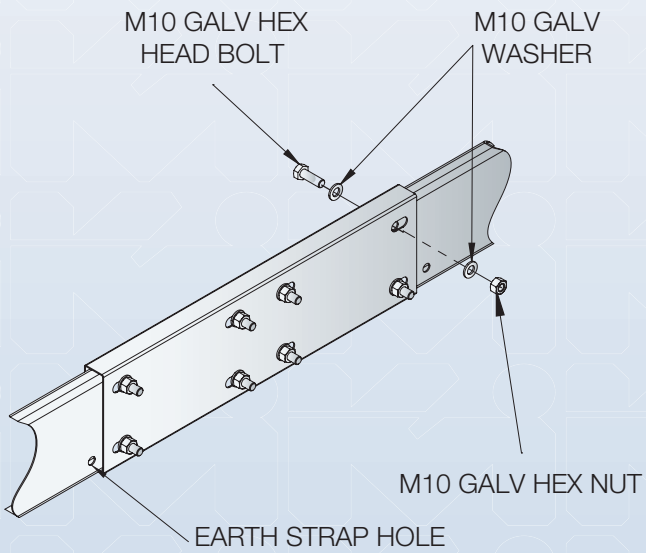
E.&O.E.

Cable Ladder **SPLICE PLATES**

4/70L, 4/70 & 5/112 SPLICE PLATES

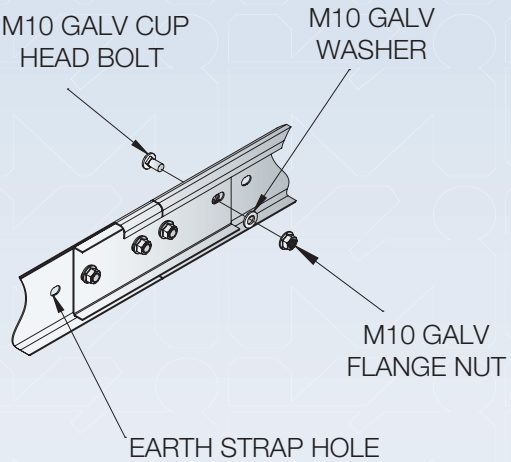


RAIL OUT

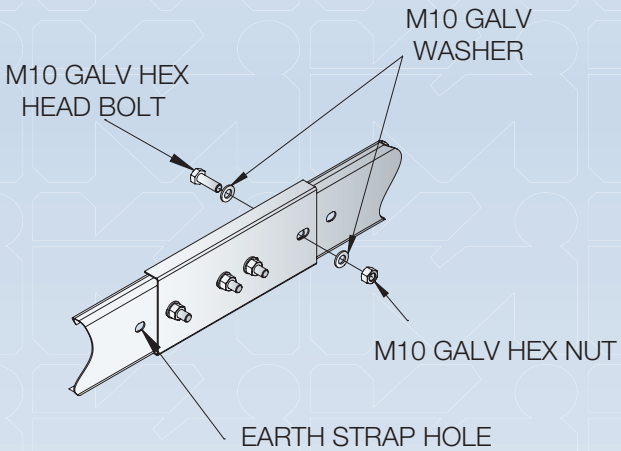


RAIL IN

3/50 SPLICE PLATES N.E.M.A. 16A



RAIL OUT



RAIL IN

ORDERING INFORMATION

3 CL P S RO

- RO — RAIL DIRECTION
  e.g. (RO = Rail Out)
  EAST COAST ONLY
- S = Stainless Steel
- P — SPLICE PLATE
- CL — CABLE LADDER
- 3 — LADDER TYPE
  3 = 3/50
  4 = 4/70
  5 = 5/112

E.&O.E.

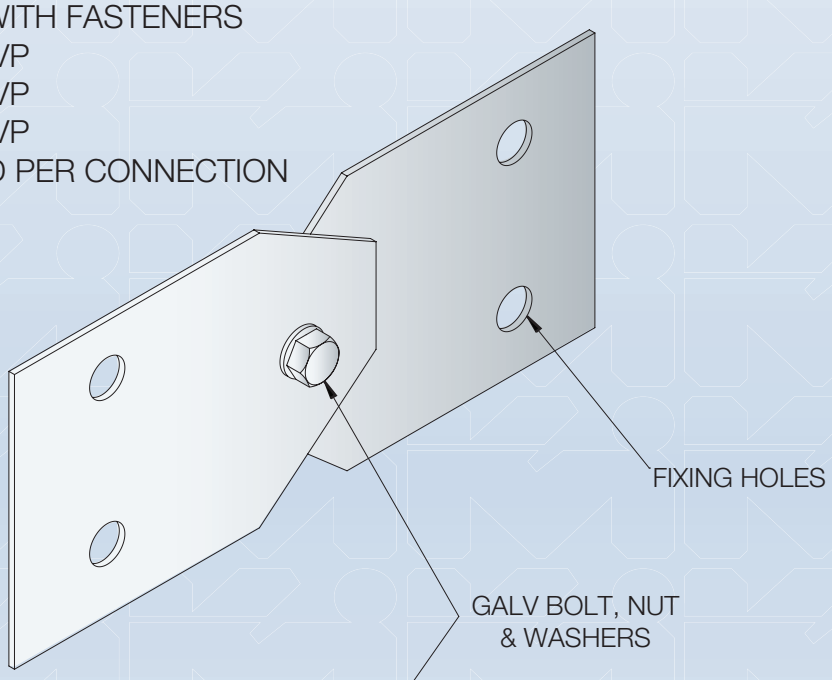
KOUNIS Metal Industries

Cable Ladder **HINGE SPLICE PLATES**

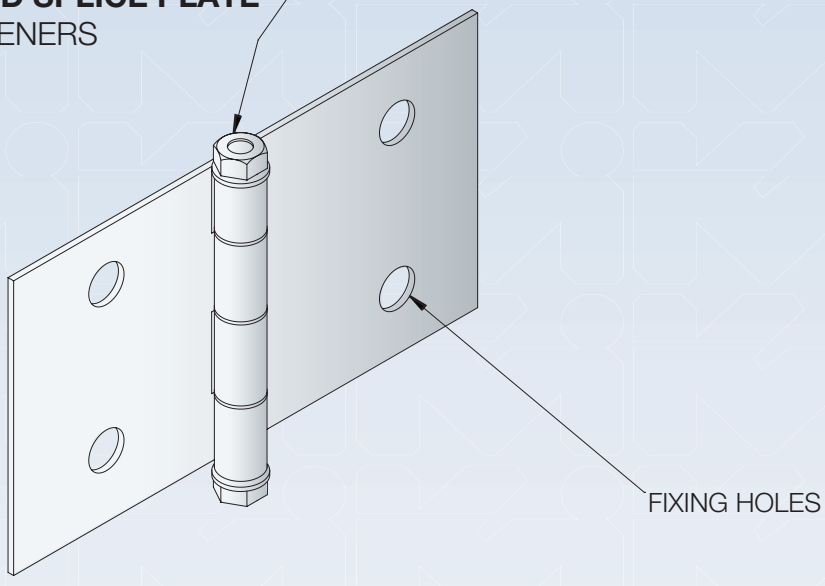
These fittings enable site offsets to be made and offer a flexible approach to particular instillations.

Hinged splice plates should not be used for full 90° changes of direction but offer a cost effective way of offsetting ladders on site.

VERTICAL HINGED SPLICE PLATE
SUPPLIED WITH FASTENERS
CODE: 3CVP
4CVP
5CVP
2 REQUIRED PER CONNECTION



HORIZONTAL HINGED SPLICE PLATE
SUPPLIED WITH FASTENERS
CODE: 3CHP
4CHP
5CHP



E.&O.E.

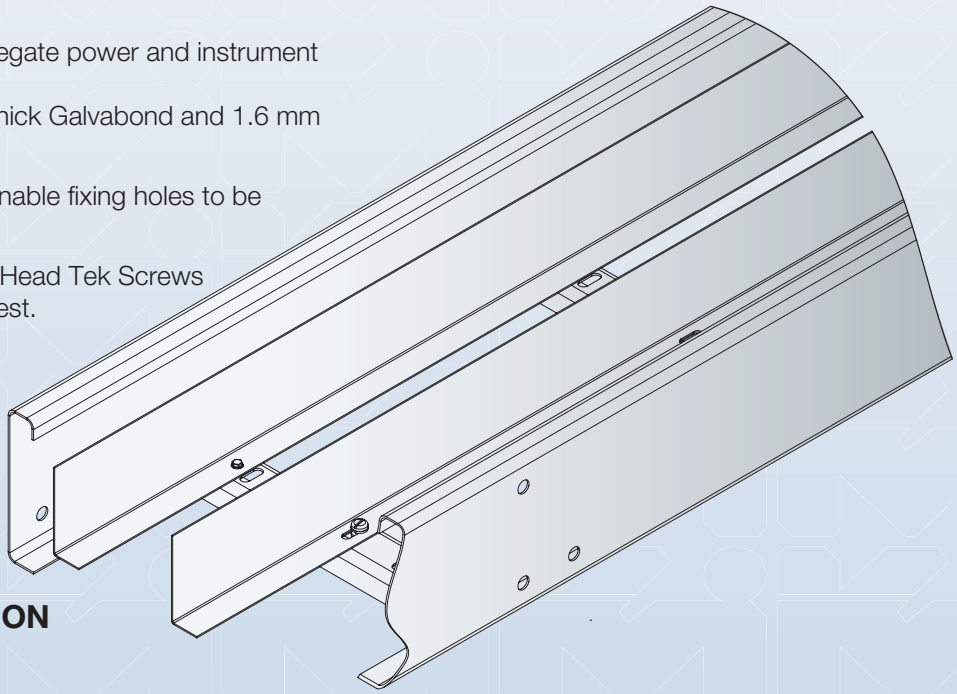
Cable Ladder **BARRIER STRIP**

BARRIER STRIP

Barrier Strip is supplied to segregate power and instrument cables.
Standard finishes are 1.0 mm thick Galvabond and 1.6 mm Thick Hot Dip Galvanised steel.

Barrier strip is un-punched to enable fixing holes to be positioned where required.

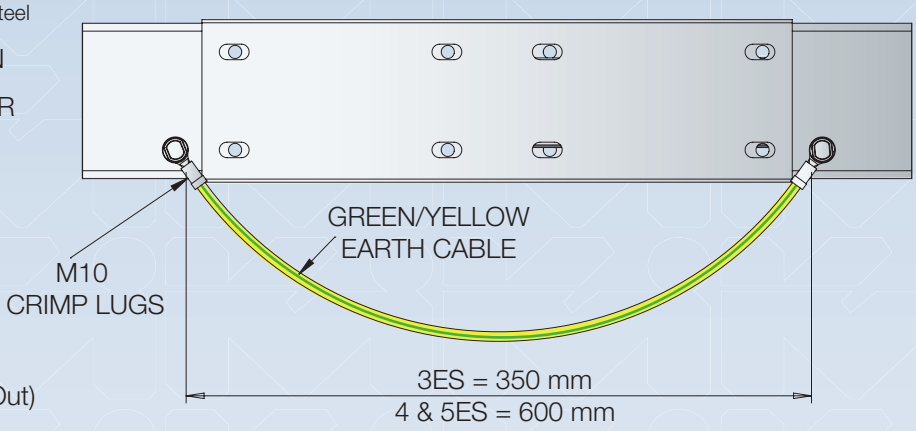
Fixings for barrier strip are Hex Head Tek Screws which can be supplied on request.



ORDERING INFORMATION

3 C S G

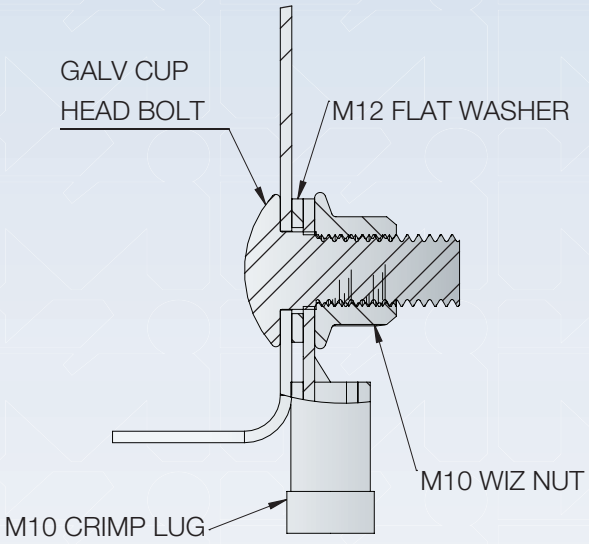
- G — FINISH
  - G = Galvabond
  - HG = Hot Dip Galvanised
  - S = Stainless Steel
- S — SEGREGATION
- C — CABLE LADDER
- 3 — LADDER TYPE
  - 3 = 3/50
  - 4 = 4/70
  - 5 = 5/112



TYPE 3/50
Kit Code 3ES (Rail In) 3ESRO (Rail Out)

TYPE 4/70
Kit Code 4ES (Rail In) 4ESRO (Rail Out)

TYPE 5/112
Kit Code 5ES (Rail In) 5ESRO (Rail Out)



SUPPLY PER EARTH STRAP
RAIL IN - M10 HEX GALV SCREW X25mm X2EA
M10 HEX GALV NUT X2EA
M10 HEX GALV FLAT WASHER X2EA
M10 HEX GALV SPRING WASHER X2EA

SUPPLY PER EARTH STRAP
RAIL OUT - M10 CUP HEAD GALV SCREW X20mm X2EA
M10 HEX GALV WIZ NUT X2EA
M12 HEX GALV FLAT WASHER X2EA
M10 ZINC FLAT WASHER X2EA

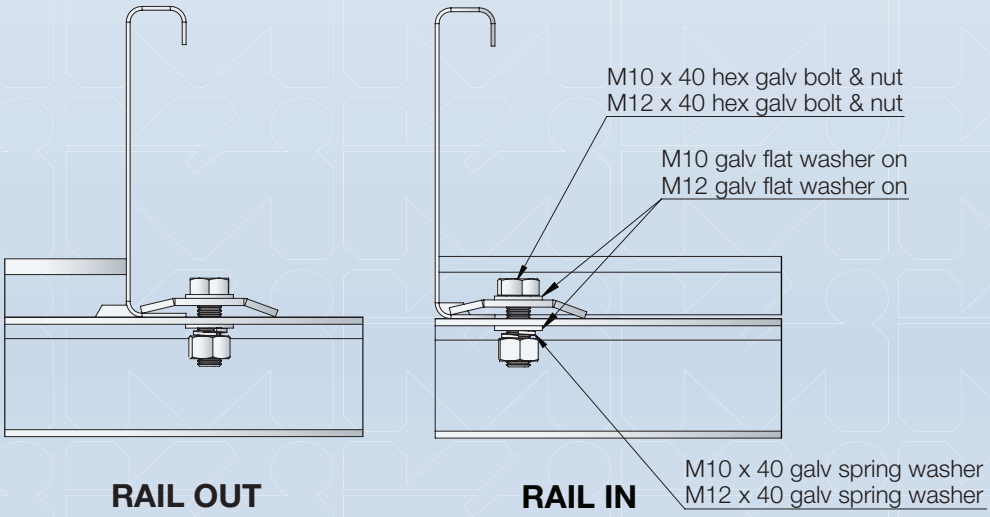
Cable Ladder **ACCESSORIES**

LADDER HOLD DOWN CLAMPS

Ladder Clamps are supplied

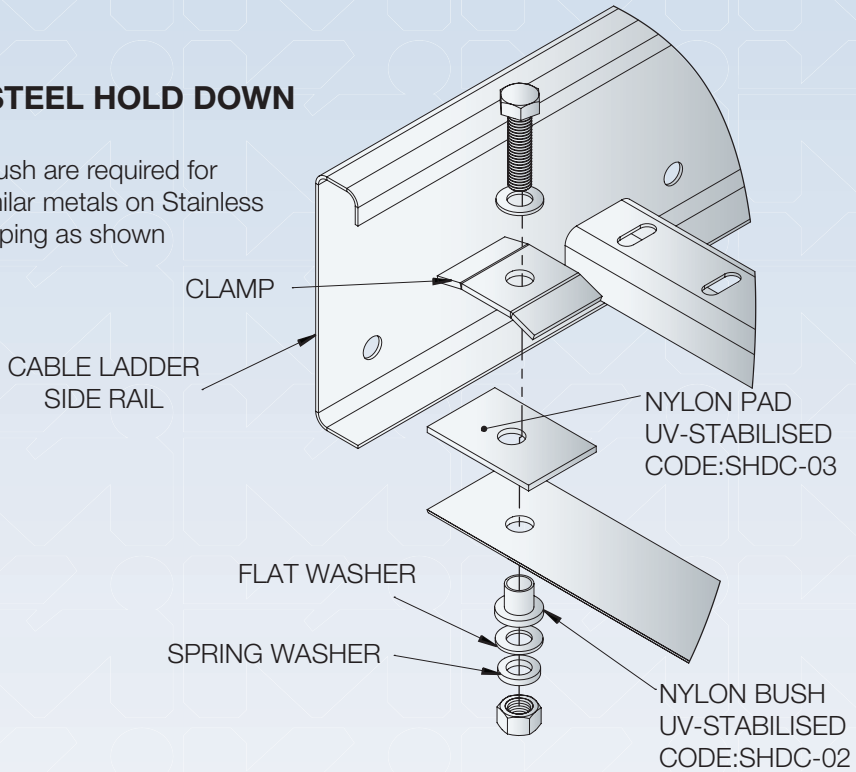
STANDARD:	CODE: HDCS	3mm thick Hot Dip Galvanised
	CODE: HDCSS	3mm thick 316 Stainless Steel
FIXINGS:	CODE: HDCBN10	M10 x 40 Galv Bolt, Nut & washers
	CODE: HDCBNS10	M10 x 40 316 SS Bolt, Nut & washers
CYCLONIC:	CODE: HDCC10	5mm thick Hot Dip Galvanised 11 dia hole
	CODE: HDCC12	5mm thick Hot Dip Galvanised 14 dia hole
	CODE: HDCCS10	5mm thick 316 Stainless Steel 11 dia hole
FIXINGS:	CODE: HDCBN10	M10 x 40 Galv Bolt, Nut & washers
	CODE: HDCBN12	M12 x 40 Galv Bolt, Nut & washers
	CODE: HDCBNS10	M10 x 40 316 SS Bolt, Nut & washers

NB: Fastening lengths are based on fixing to a 8mm maximum thickness. For other supports we would require details when ordering to ensure correct fastener length.



STAINLESS STEEL HOLD DOWN ASSEMBLY

Nylon Pad and Bush are required for isolation of dissimilar metals on Stainless Steel ladder clamping as shown



E.&O.E.

NOTES