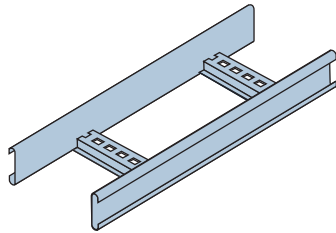


NEMA CABLE LADDER [GENERAL INFORMATION]

Unistrut manufactures and markets the largest range of cable ladder systems for the Australian Electrical Industry. This extensive range of cable ladder support systems include a comprehensive range of steel and aluminium cable ladders load rated to NEMA Standard VE1. Steel cable ladders can be manufactured to side-rail in or side-rail out configuration depending on the project requirements.

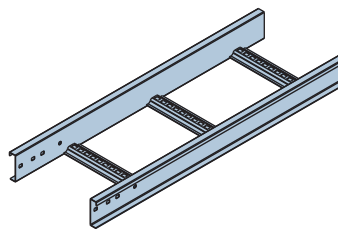
In cases where extremely high corrosion resistance is required, stainless steel cable ladder systems are available against special order. All Unistrut Cable Ladder systems are complemented with a complete range of accessories: Horizontal Bends, Internal and External Risers, Tees, Crosses, Reducers, Hinged Horizontal and Vertical Splices, Adjustable Risers, Covers, Divider Strip, Adjustable Cantilever Support Brackets and Cable Clamps.

NEMA 12B - Steel



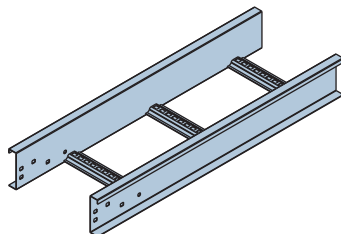
Length: 4m & 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 44mm

NEMA 16A - Steel



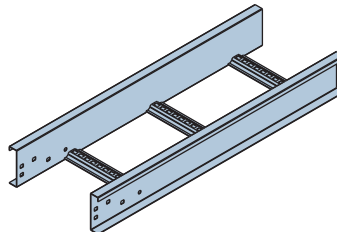
Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 72mm

NEMA 20B - Steel



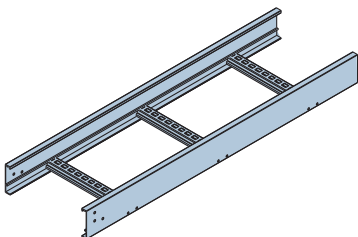
Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 109mm

NEMA 20C - Steel



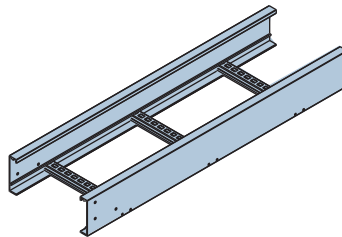
Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 125mm

NEMA 12A - Aluminium



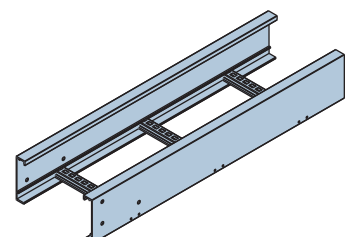
Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 67mm

NEMA 20A - Aluminium



Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 96mm

NEMA 20C - Aluminium



Length: 6m
 Width: 150, 300, 450, 600mm
 Cable Laying Depth: 125mm

The following notes are presented in order to assist users to achieve maximum economy and convenience with the installation of cable support systems. As each application will have its own particular conditions and requirements it is recommended that the services of Unistrut sales personnel and engineering team be engaged, especially in the early stages of any major project, so that the best overall result can be achieved.

Standard Sizes

Standard ladder widths are 150mm, 300mm, 450mm and 600mm, being the inside dimension between side-rails and is the maximum width available for carrying cables. Straight lengths are 6m long. Standard rung spacing on all systems is 300mm nominal.

Each of the Unistrut systems includes a full range of standard accessories, with a nominal radius of 300mm, 450mm and 600mm, depending on the system load class. Non-standard ladder widths and accessory radii can be manufactured against order.

Load Capacity

a) Cable Load – Because the cable density remains fairly constant in a total installation, the widest ladders carry the most load, and each smaller width carries proportionately less load. However, the load carrying capacity of any class of ladder is independent of the width.

For details on how safe working loads are determined, refer to the NEMA VE 1 Standard and to the published load graphs for allowable loads of each ladder type.

b) Fixed Ladder Spans – It is commonly found that the building structure supporting the cable ladders will dictate the span, but it is still possible to exercise some choice. Where the cabling is heaviest, and this is not usually extensive, it is possible to use (say) two 300mm wide ladders side by side instead of one 600mm wide, in order to select a lighter category of ladder for the total project. It is often inconvenient to use more than one ladder category in the same installation.

c) Varying the Spans – Where the structure does not dictate the ladder span, the heaviest cable runs could be supported more frequently, again enabling a lighter category of ladder to be chosen.

Cable Laying Depth

Each of the Unistrut Cable Ladder and Tray Systems has a different cable laying depth. It is a general rule that the shallower the ladder, the lower the cost per metre and the more frequently it needs support. It is sometimes found that the lightest, most economical ladders are excluded from consideration solely because a particular minimum cable laying depth is required and has been specified accordingly.

Deflection

Cable ladders are essentially structural members designed to strength requirements only and are required to support pliable load elements. Therefore, the control of deflection is not necessary for durability or stability reasons and can probably only be justified on purely aesthetic grounds. If normally accepted deflection limits such as 1/360th of span are imposed, the resultant cable ladder will be grossly over designed and correspondingly expensive.

There may still be locations where the designer wishes to limit visual deflection. For example, prestige areas which may be open to public view or where the ladder is installed at eye level and deflection is accentuated. If these conditions exist, it is recommended that closer support spacings be used only in those important locations (to control visual deflection) and normal support spacings elsewhere (for economy). A maximum of 1/180th of span, when deflection is determined from the graphs published in this catalogue, should prove a satisfactory limit for visual deflection.

Otherwise, wherever overall economy is the principal consideration, no limits should be placed on deflection. This does not mean that deflection will be excessive but simply that a typically acceptable installation will result and optimum economy will be attained.

Material Selection

Often the most difficult decision to be made is the selection of material, because it involves the most cost-sensitive of compromises. Material choice is directly related to service life and the longer the required life the more expensive will be the materials. The cost of these materials also must be considered as an equation of initial investment versus maintenance costs and eventual replacement.

Because service conditions for cable ladders can vary over an enormously wide range, even within a single installation, it is impossible to write down any hard and fast rules on the subject of corrosion and expected lifespan. The following may be considered a guide as to what can be expected from the various materials and finishes currently available for cable support systems.

- a) **Galvanised Steel** – Hot-dipped galvanised steel (after fabrication) is a common selection, as it is economical to purchase and suitable for most conditions of outdoor exposure. For indoor applications, or anywhere that is essentially free from moisture, galvanised ladders can be considered to have an indefinite life. That is, they should last as long as the plant, building, cabling or equipment which they service.

On a typical industrial or processing plant installation, exposed to weather, moisture and airborne industrial pollution, a basic life of approximately ten years can be expected. This is not to say that the ladder will be completely corroded in that time but it is the probable life of the corrosion protection finish. Beyond that time, rapid decay can be expected and maintenance costs will increase substantially in order to keep the ladders serviceable.

The ten year life quoted here should be adjusted up or down depending on the circumstances. For example, if installed near the coast, the effect of salt laden air may shorten the expected life. Also galvanising is sensitive to some chemicals, especially sulphurous compounds, which may be intrinsic to plant operations where the ladder is installed. Correspondingly, a longer life will be expected in lighter industrial situations and if drier conditions exist.

- b) **Aluminium** – Aluminium is also a popular choice of material for cable ladders. Most frequently it is selected because of its excellent performance in marine environments such as is found on wharves, coal loaders or similar Port Facilities where salt spray or salt laden atmosphere is present. Another reason for using aluminium is that it offers a long maintenance free life which is important in cases where access for future painting or repairs may be costly and difficult.

For any given load class or capacity, aluminium cable ladders are more expensive than their galvanised steel counterparts. Aluminium ladders can also be expected to have a greater deflection than an equivalent steel system. On the other hand, they are lighter, more readily handled and are easy to work with, resulting in faster installation and therefore lower installation cost.

Aluminium cable ladders can be expected to have a lifespan well in excess of twenty years in most industrial or marine applications. The exception would be in the case of a local concentration of chemicals which are detrimental to aluminium. Alkaline compounds or fumes is a common example but if any doubt exists, the advice of aluminium suppliers should be sought.

c) Powder Coating or Paint Systems:

1. Coating on bare steel.

Painting over bare steel is not generally recommended for cable ladders. This comment applies to virtually all types of 'organic' or non-metallic coatings such as powder coatings, polyesters, PVC or nylon. Although these coatings are resistant to a wide variety of chemicals, their effectiveness on cable ladders can be limited. The non-sacrificial nature of paint films means that anywhere the coating is broken, corrosion is permitted to obtain a foot-hold. It is then able to spread rapidly underneath the paint, lifting it off and allowing corrosion to progress even further.

If it is decided to use a paint or powder coating on bare steel, then before commissioning, a compatible repair paint should be used to make good any places on the ladder installation that may have been damaged during erection.

2. Coating over Galvanised Steel or Aluminium

Application of paint systems over either of the above materials is obviously a more expensive approach, but in some circumstances it is the only answer. If ladders are installed in close proximity to acid tanks, process vats, steam pipes or similar situations, there may be no metallic finish capable of giving satisfactory service life. This can be overcome by the application of a suitable paint or powder coating over galvanised or aluminium base materials. Naturally, in order to contain costs, the additional finish need only be applied to those sections of the work which are effectively exposed to the corrosive fumes.

- d) **Stainless Steel** – Stainless Steel is sometimes considered as a material for cable ladders, usually where extremely high corrosion resistance, coupled with difficulty of servicing after installation and a high degree of reliability are essential requirements. An off-shore oil drilling platform may be one example where these conditions exist.

The NEMA Standards

NEMA STANDARD No. VE 1 is published by the National Electrical Manufacturers Association in the U.S.A. The Standard provides for the technical requirements of construction, performance and testing of cable tray systems. It is regularly revised by the Association in order to keep pace with technology and the ever changing requirements of the manufacturers, contractors, consultants and other users throughout the electrical industry.

There is presently no Australian Standard governing cable support systems. Despite the existence of other versions from places such as Canada and Europe, the NEMA VE 1 is by far the most widely accepted and the best known Standard for cable supports in Australia. In recognition of this situation, and in order to produce cable ladders of known quality and load capacity, Unistrut has adopted a policy of constructing and rating its cable support products in accordance with the VE 1 Standard wherever possible. This policy is reflected in the name and various class designation numbers now used by Unistrut which are drawn directly from the Standard. For example NEMA Class 12B, 16A, 20B or 20C. Please note that in most cases Unistrut ladders exceed the minimum strength requirements of each ladder class and therefore the published load graphs should be consulted in order to find the actual safe load capacity for each ladder type.

The more important aspects of the NEMA Standard VE 1 which are relevant to Unistrut products are described as follows:

1. Load Capacity and Safety Factor

Safe working loads are required to be determined as a result of testing a series of sample ladders. Tests must be conducted as simple spans (ie the worst case for loading) and over various span lengths with a safety factor of 1.5 against the collapse load of the ladder. In this way, loads are based on average performance of a number of samples and not just a single test or some calculations. The Standard does not permit working loads to be determined by calculation because it has proven to be too unreliable. Cable ladders are specialist products which are unconventional in the structural sense. That is, they have an unusual combination of slenderness, local buckling of thin material and overall lateral restraint elements which are not satisfactorily interpreted by normal design methods.

2. Deflection

The NEMA Standard VE 1 does not specify any limitation on the deflection of cable support members. To do so, would inevitably result in an over-designed (and hence uneconomical) system. For further information on deflection please refer to notes under Guidelines for Ladder Selection.

3. Electrical Continuity

The electrical resistance of connections is limited to a maximum of 330 micro-ohms. Representative samples of Unistrut splice joints (both steel and aluminium) as well as the rung to side-rail joint in aluminium ladders have been tested by an Independent Electrical Laboratory, and in all cases were found to comply with the NEMA Standard VE 1 specification.

Explanation of NEMA VE 1 load/span class designations

The NEMA VE 1 rating method is based on the Imperial system of measurement, as follows:

1. The numerals indicate the ladder span in feet.

8	=	8ft (2.4m)
12	=	12ft (3.6m)
16	=	16ft (4.8m)
20	=	20ft (6.0m)

2. The letter indicates the working load category.

A	=	50lbs/lin.ft (75kg/m)
B	=	75lbs/lin.ft (112kg/m)
C	=	100lbs/lin.ft (149kg/m)

Example: A 20B class ladder requires a minimum safe working load of 75 lb/ft. over a 20ft.span. (ie.112kg/m over a 6.0m span)

Steel Cable Ladder (SCL)

Galvanised steel cable ladders are the most popular format for cable support systems as they afford a good combination of cost, strength and service life. Unistrut manufactures a complete range of NEMA Steel Cable Ladder systems. These provide a wide range of load and span combinations to suit the requirement of almost any installations.

Side-Rail Alternative - With the exception of Nema 12B, all ladder systems are available with the side-rails turned outward (as standard), or inward (RI) to meet varying client specifications.

All ladder systems are load rated to NEMA Standard VE 1.

Stainless Steel - In cases where extremely high corrosion resistance is required, stainless steel cable ladder may be the only solution. All steel cable ladder systems are available in stainless steel on special order only. For load and deflection calculations, contact your local Unistrut Service Centre.

Splice Plates

16A, 20B and 20C Systems - Unistrut steel splice plates are of a robust and practical design. The neat fitting flanges and bolted configuration of Unistrut splices also reduces deflection at joints as the ladder is loaded. Unsightly dips or discontinuities along the ladder run are therefore avoided. Bolt holes in splice plates and ladder side-rails are elongated so that site misalignments as well as thermal expansion and contraction are catered for.

12B Systems - The 12B splice plate incorporates virtually all of the working features as described for the 16A, 20B and 20C ladders, but because the 12B is a lighter duty system, a simplified splice design is used. Requiring only two fixing bolts and eliminating the need for matching holes in the side-rail, the 12B splice plate is convenient in use and extremely fast to install.

Notes - *Electrical resistance across splice joints is less than the 330 micro-ohms limit specified by NEMA Standard VE 1. To attain maximum working load of the system, the following recommendations should be adopted.*

- Do not splice single spans of ladder.
- Avoid splice joints in the vicinity of the end supports on continuous runs.
- Avoid splice joints directly over intermediate supports on continuous runs.
- Locate splice joints at the quarter span point between supports on continuous runs.

If in doubt, please consult your Unistrut Service Centre.

Accessories – All Unistrut steel cable ladder systems are complemented by a full range of standardised fabricated accessories and fittings which are readily available. All are of a welded construction.

Built-in Splice - The principal feature of all Unistrut cable ladder accessories is the 'built-in' splice plate. A shaped extension of the accessory side-rail permits direct connection to the straight ladder eliminating the need for a separate splice component. The advantages of this method are:

- Minimised fixing hardware and components.
- When joining to a cut ladder, the accessory end acts as a convenient drill template for bolt holes.
- Simplifies pre-planning, quantity take-offs and ordering.
- No left-over components.
- Strong and rigid joint.
- Faster installation.

Accessories are attached with the same fasteners as used for straight splice plates. Threaded fasteners are hot dipped galvanised.

Elongated slots allow easier fit-up and permit adjustments in alignment to be absorbed.

Construction

Unistrut steel cable ladders are manufactured from steel to AS/NZS1594 "Hot-Rolled Steel Flat Products" which are cold roll formed to the desired shape. The roll forming process improves the mechanical properties of the metal whilst the special lipped channel section is designed to give the best possible combination of strength-to-weight, lateral rigidity and low deflection. The rungs are fillet welded to the side-rails which further improves the overall stability as well as strength of the finished product. The rung joint is so designed that galvanising can be effected to all areas.

Ladders, accessories and other galvanised components are hot-dipped galvanised to AS/NZS 4680 / BS EN ISO 1461:2009, after fabrication.

NEMA 12B Straight Tray [HG]

Cable Laying Depth: 44mm

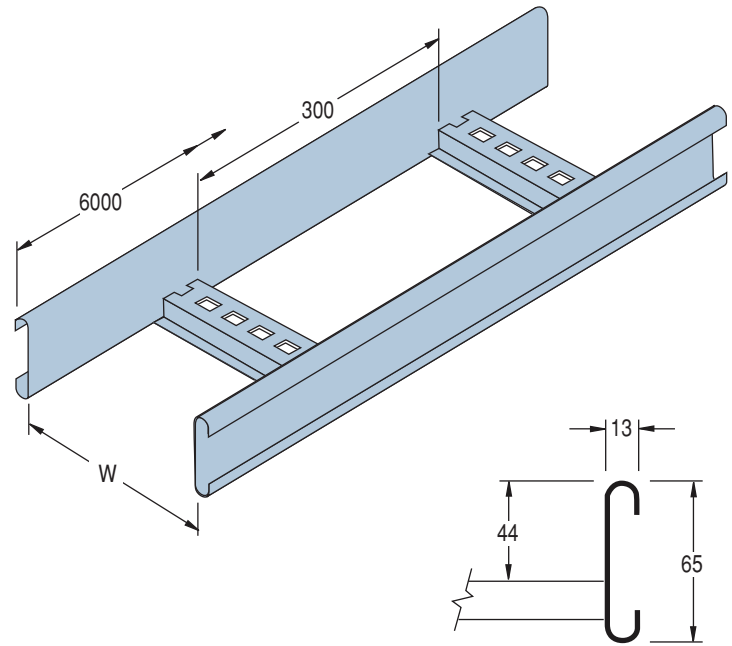
Loading Data:
Basic Load Capacity
112kg/lin.m on 3.6m span

Length: 4m & 6m

Rung Spacing: 300mm nominal

Standard Finish: Hot Dipped Galvanised

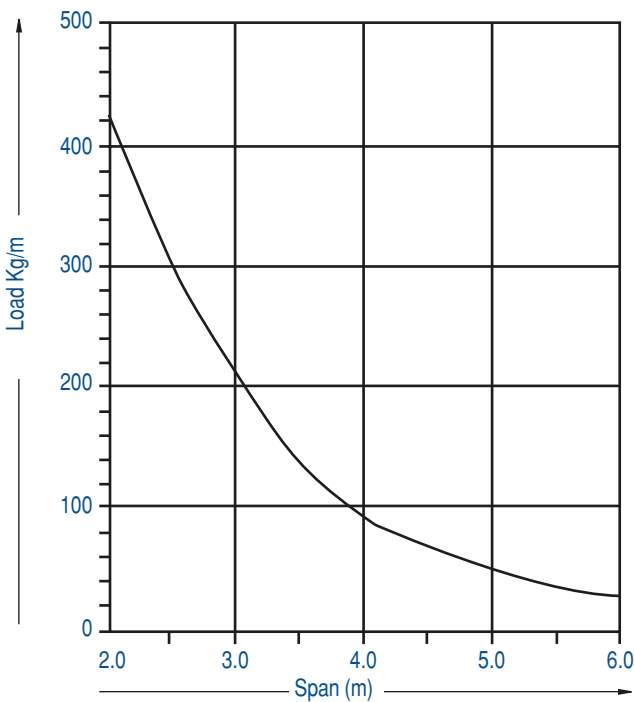
Also available in Stainless Steel
(3m length, part no. LUE)



Dim "W"	Type	Part No.	
		4m	6m
150	12B	LEE101	LEE1016
300	12B	LEE103	LEE1036
450	12B	LEE104	LEE1046
600	12B	LEE106	LEE1066

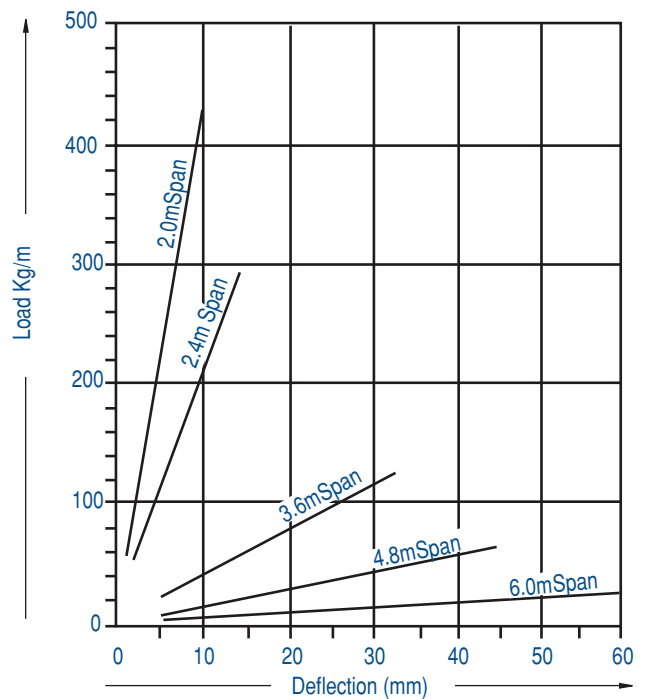
• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing.
Safety Factor = 1.5 on collapse load for single span.

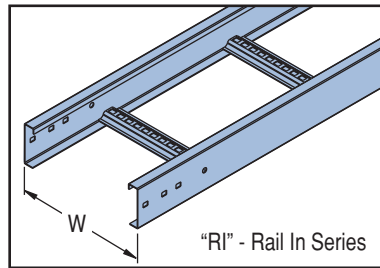
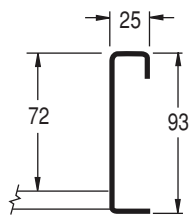
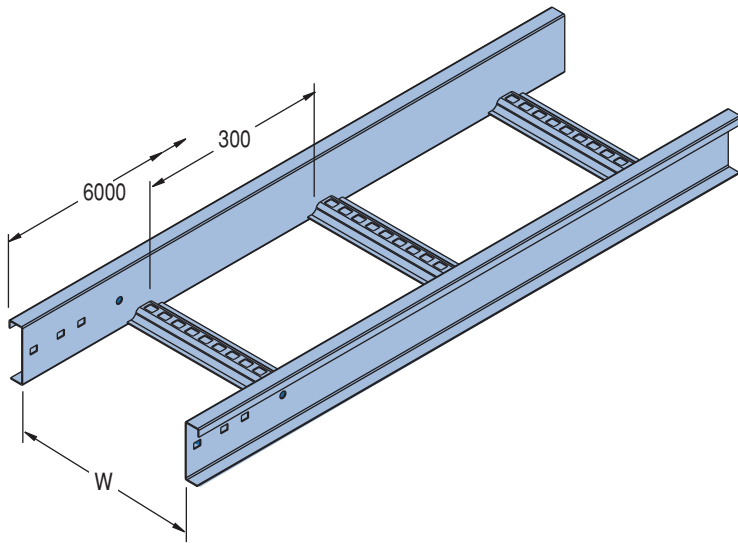
Deflection Graph



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

NEMA 16A STEEL CABLE LADDER

NEMA 16A Straight Tray [HG]



Cable Laying Depth: 72mm

Loading Data:

Basic Load Capacity
 90kg/lin.m on 4.8m span
 79kg/lin.m on 6m span

Length: 6m

Rung Spacing: 300mm nominal

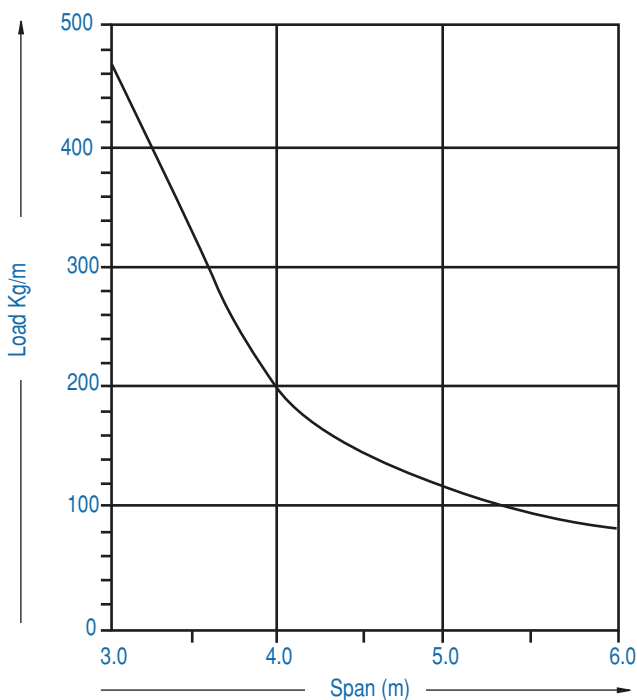
Standard Finish: Hot Dipped Galvanised

Also available in Stainless Steel Grade 316
 (3m length, part no. LUG)

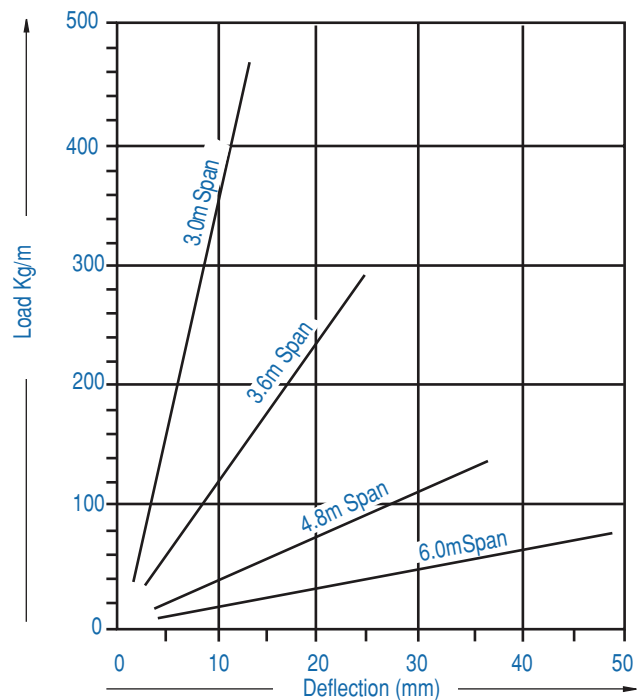
Dim "W"	Type	Part No.
150	16A	LEG101
300	16A	LEG103
450	16A	LEG104
600	16A	LEG106
150	16A-RI	LEG101R
300	16A-RI	LEG103R
450	16A-RI	LEG104R
600	16A-RI	LEG106R

• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph



Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing.
 Safety Factor = 1.5 on collapse load for single span.

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

NEMA 20B Straight Tray [HG]

Cable Laying Depth: 109mm

Loading Data:

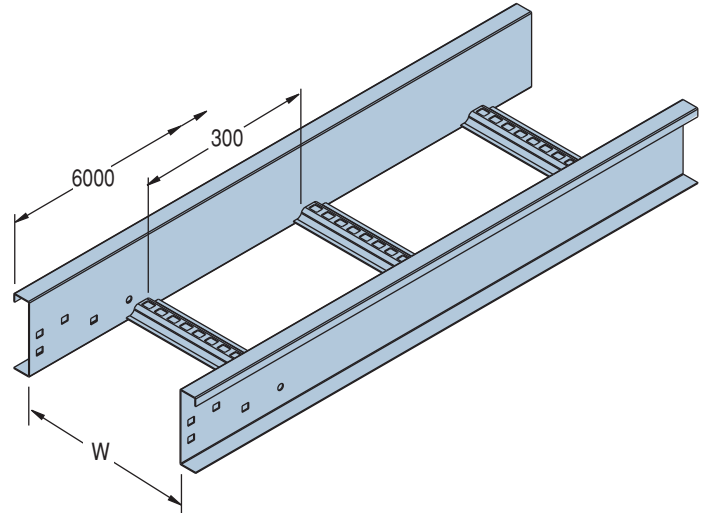
Basic Load Capacity
136kg/lin.m on 6m span

Length: 6m

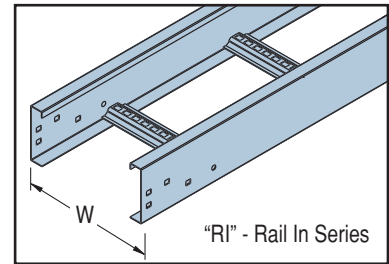
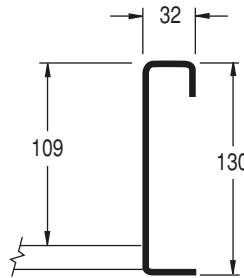
Rung Spacing: 300mm nominal

Standard Finish: Hot Dipped Galvanised

Also available in Stainless Steel Grade 316
(part no. LUK)

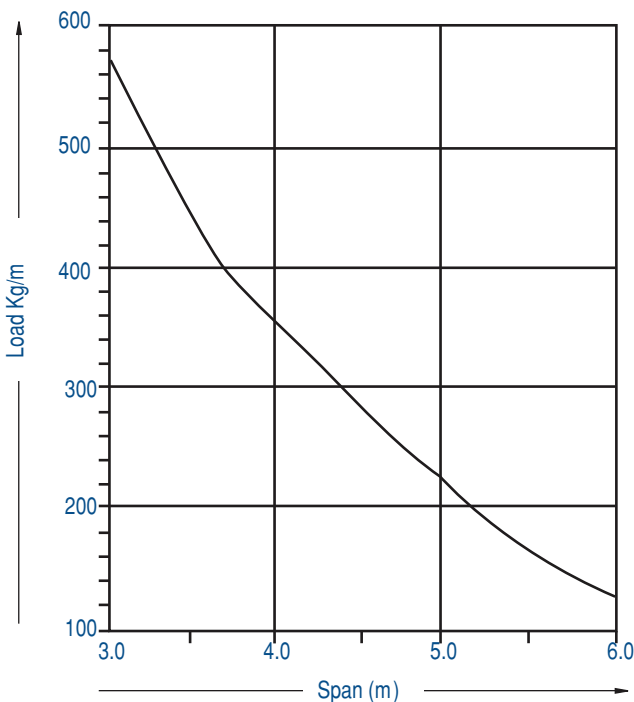


Dim "W"	Type	Part No.
150	20B	LEK101
300	20B	LEK103
450	20B	LEK104
600	20B	LEK106
150	20B-RI	LEK101R
300	20B-RI	LEK103R
450	20B-RI	LEK104R
600	20B-RI	LEK106R

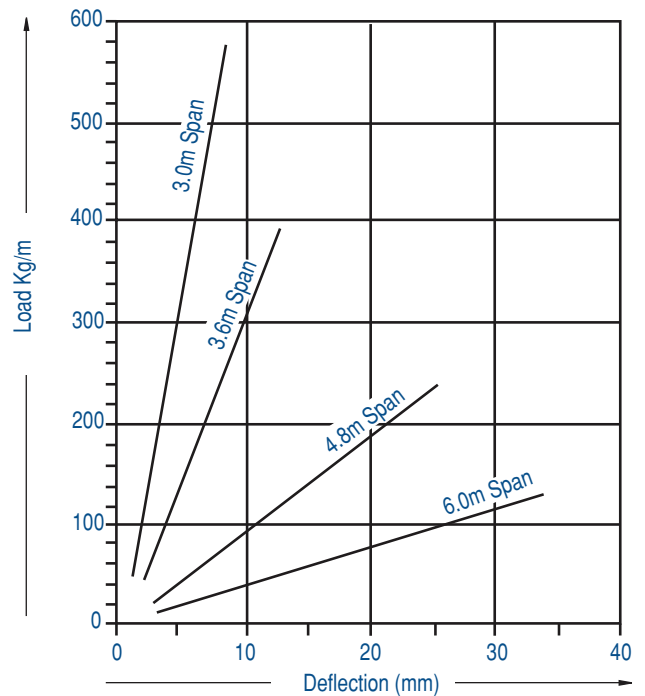


• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph

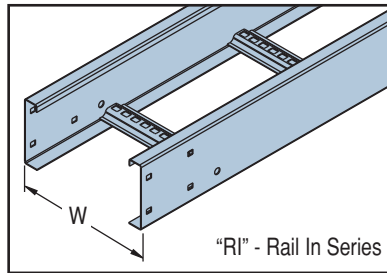
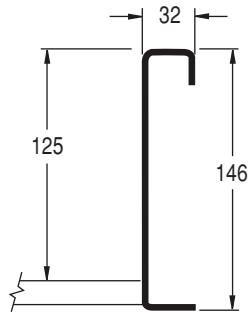
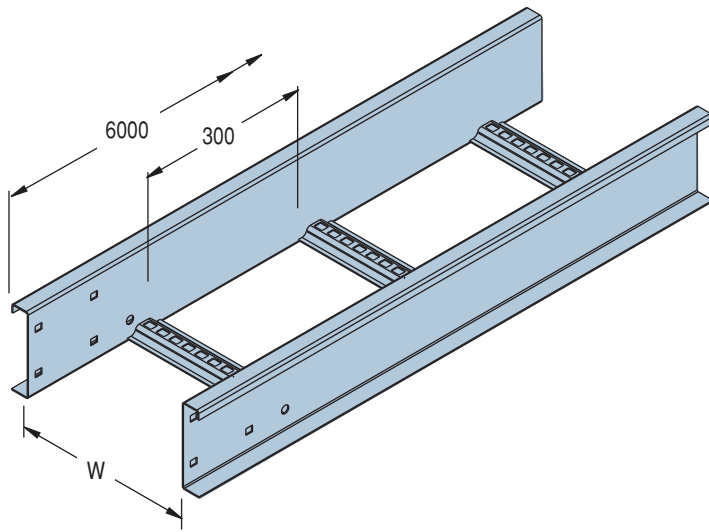


Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing.
Safety Factor = 1.5 on collapse load for single span.

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

NEMA 20C STEEL CABLE LADDER

NEMA 20C Straight Tray



Cable Laying Depth: 125mm

Loading Data:

Basic Load Capacity
168kg/lin.m on 6m span

Length: 6m

Rung Spacing: 300mm nominal

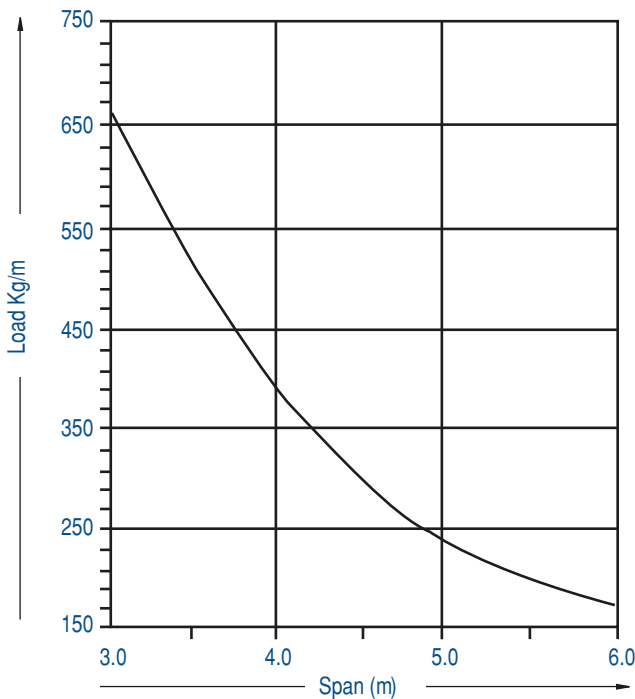
Standard Finish: Hot Dipped Galvanised

Also available in Stainless Steel Grade 316
(part no. LUL)

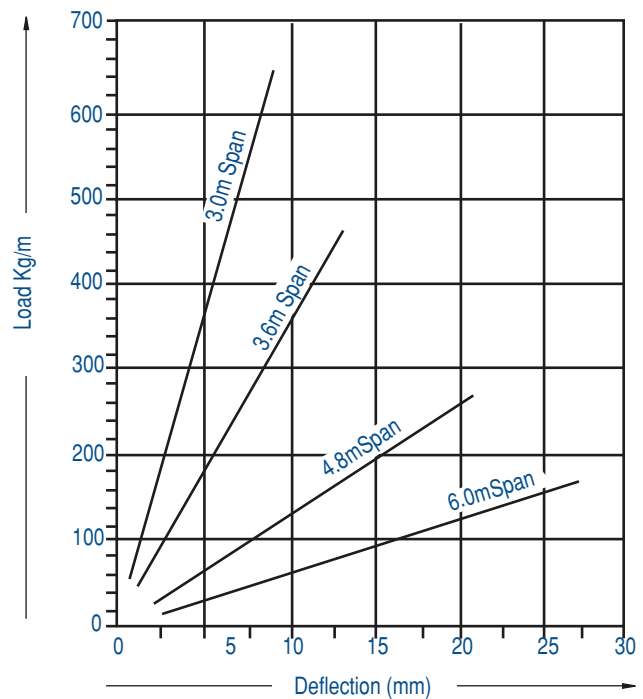
Dim "W"	Type	Part No.
150	20C	LEL101
300	20C	LEL103
450	20C	LEL104
600	20C	LEL106
150	20C-RI	LEL101R
300	20C-RI	LEL103R
450	20C-RI	LEL104R
600	20C-RI	LEL106R

• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph



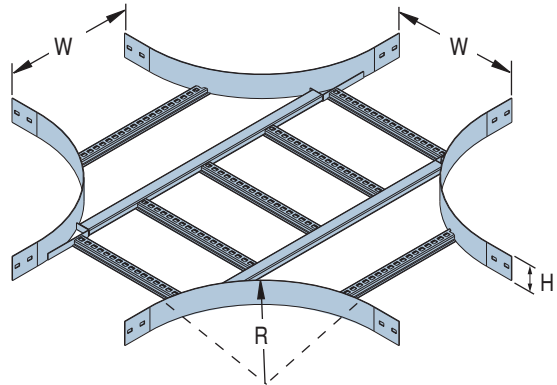
Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing.
Safety Factor = 1.5 on collapse load for single span.

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

NEMA STEEL CABLE LADDER – CROSSES, BENDS & TEES

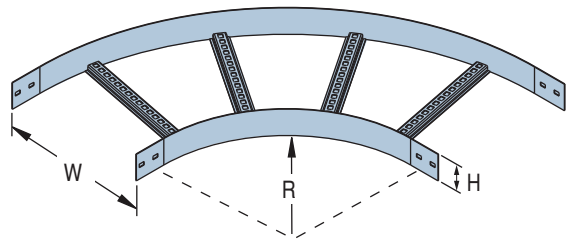
Cross [HG]

Type	Radius "R"	Width "W"	Height "H"	Part No.
12B	300	150	60	LEE181
12B	300	300	60	LEE183
12B	300	450	60	LEE184
12B	300	600	60	LEE186
16A	450	150	84	LEG181
16A	450	300	84	LEG183
16A	450	450	84	LEG184
16A	450	600	84	LEG186
20B	600	150	119	LEK181
20B	600	300	119	LEK183
20B	600	450	119	LEK184
20B	600	600	119	LEK186
20C	600	150	135	LEL181
20C	600	300	135	LEL183
20C	600	450	135	LEL184
20C	600	600	135	LEL186



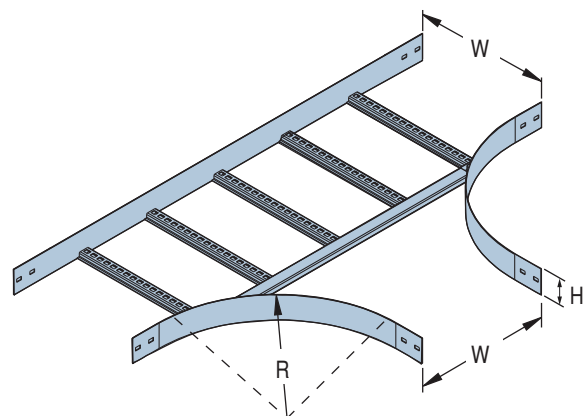
Flat Bend 90° [HG]

Type	Radius "R"	Width "W"	Height "H"	Part No.
12B	300	150	60	LEE111
12B	300	300	60	LEE113
12B	300	450	60	LEE114
12B	300	600	60	LEE116
16A	450	150	84	LEG111
16A	450	300	84	LEG113
16A	450	450	84	LEG114
16A	450	600	84	LEG116
20B	600	150	119	LEK111
20B	600	300	119	LEK113
20B	600	450	119	LEK114
20B	600	600	119	LEK116
20C	600	150	135	LEL111
20C	600	300	135	LEL113
20C	600	450	135	LEL114
20C	600	600	135	LEL116



Tee [HG]

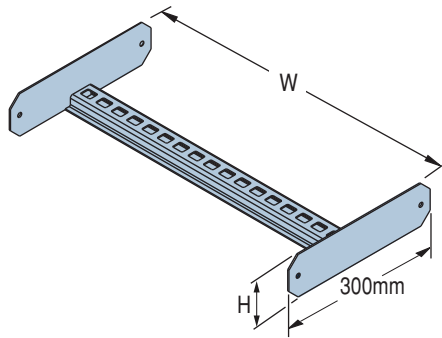
Type	Radius "R"	Width "W"	Height "H"	Part No.
12B	300	150	60	LEE191
12B	300	300	60	LEE193
12B	300	450	60	LEE194
12B	300	600	60	LEE196
16A	450	150	84	LEG191
16A	450	300	84	LEG193
16A	450	450	84	LEG194
16A	450	600	84	LEG196
20B	600	150	119	LEK191
20B	600	300	119	LEK193
20B	600	450	119	LEK194
20B	600	600	119	LEK196
20C	600	150	135	LEL191
20C	600	300	135	LEL193
20C	600	450	135	LEL194
20C	600	600	135	LEL196



• Fixing Hardware for all cable ladder systems must be ordered separately.

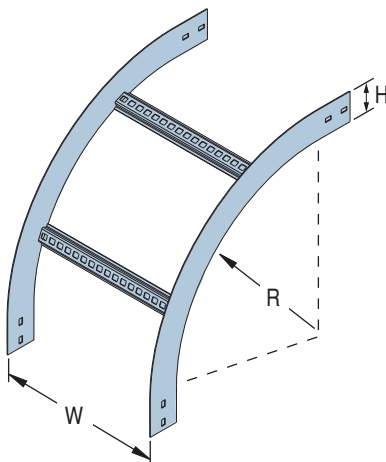
NEMA STEEL CABLE LADDER – RISERS

Adjustable Riser [HG]



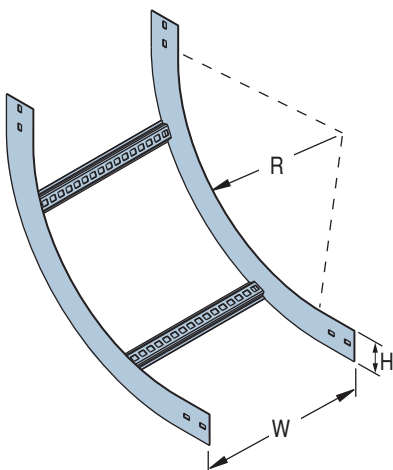
Type	Width "W"	Height "H"	Part No.
12B	150	60	LEE141
12B	300	60	LEE143
12B	450	60	LEE144
12B	600	60	LEE146
16A	150	84	LEG141
16A	300	84	LEG143
16A	450	84	LEG144
16A	600	84	LEG146
20B	150	119	LEK141
20B	300	119	LEK143
20B	450	119	LEK144
20B	600	119	LEK146
20C	150	135	LEL141
20C	300	135	LEL143
20C	450	135	LEL144
20C	600	135	LEL146

External Riser - 90° [HG]



Type	Radius "R"	Width "W"	Height "H"	Part No.
12B	300	150	60	LEE131
12B	300	300	60	LEE133
12B	300	450	60	LEE134
12B	300	600	60	LEE136
16A	450	150	84	LEG131
16A	450	300	84	LEG133
16A	450	450	84	LEG134
16A	450	600	84	LEG136
20B	600	150	119	LEK131
20B	600	300	119	LEK133
20B	600	450	119	LEK134
20B	600	600	119	LEK136
20C	600	150	135	LEL131
20C	600	300	135	LEL133
20C	600	450	135	LEL134
20C	600	600	135	LEL136

Internal Riser - 90° [HG]

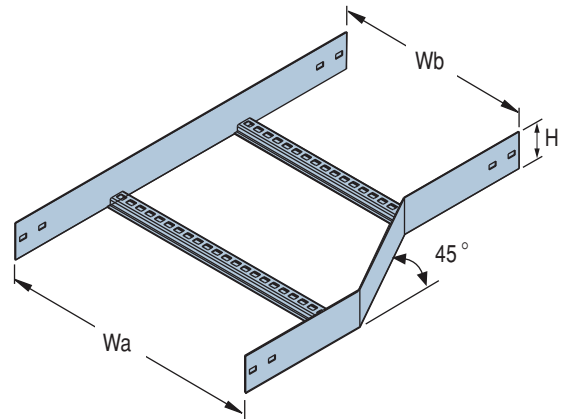


Type	Radius "R"	Width "W"	Height "H"	Part No.
12B	300	150	60	LEE121
12B	300	300	60	LEE123
12B	300	450	60	LEE124
12B	300	600	60	LEE126
16A	450	150	84	LEG121
16A	450	300	84	LEG123
16A	450	450	84	LEG124
16A	450	600	84	LEG126
20B	600	150	119	LEK121
20B	600	300	119	LEK123
20B	600	450	119	LEK124
20B	600	600	119	LEK126
20C	600	150	135	LEL121
20C	600	300	135	LEL123
20C	600	450	135	LEL124
20C	600	600	135	LEL126

• Fixing Hardware for all cable ladder systems must be ordered separately.

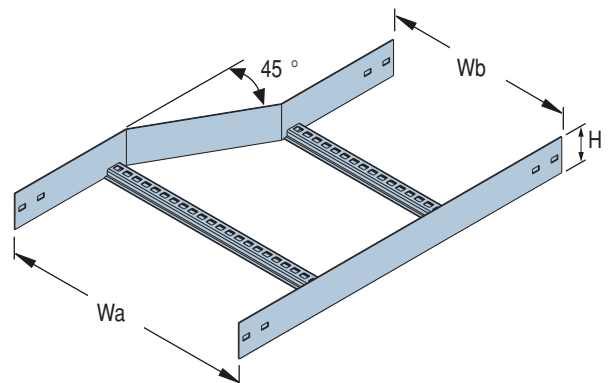
Offset Reducer, Left Hand [HG]

Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12B	600	450	60	LEE1764
12B	600	300	60	LEE1763
12B	600	150	60	LEE1761
12B	450	300	60	LEE1743
12B	450	150	60	LEE1741
12B	300	150	60	LEE1731
16A	600	450	84	LEG1764
16A	600	300	84	LEG1763
16A	600	150	84	LEG1761
16A	450	300	84	LEG1743
16A	450	150	84	LEG1741
16A	300	150	84	LEG1731
20B	600	450	119	LEK1764
20B	600	300	119	LEK1763
20B	600	150	119	LEK1761
20B	450	300	119	LEK1743
20B	450	150	119	LEK1741
20B	300	150	119	LEK1731
20C	600	450	135	LEL1764
20C	600	300	135	LEL1763
20C	600	150	135	LEL1761
20C	450	300	135	LEL1743
20C	450	150	135	LEL1741
20C	300	150	135	LEL1731



Offset Reducer, Right Hand [HG]

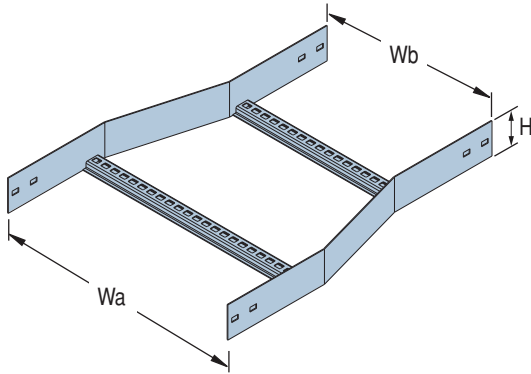
Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12B	600	450	60	LEE1664
12B	600	300	60	LEE1663
12B	600	150	60	LEE1661
12B	450	300	60	LEE1643
12B	450	150	60	LEE1641
12B	300	150	60	LEE1631
16A	600	450	84	LEG1664
16A	600	300	84	LEG1663
16A	600	150	84	LEG1661
16A	450	300	84	LEG1643
16A	450	150	84	LEG1641
16A	300	150	84	LEG1631
20B	600	450	119	LEK1664
20B	600	300	119	LEK1663
20B	600	150	119	LEK1661
20B	450	300	119	LEK1643
20B	450	150	119	LEK1641
20B	300	150	119	LEK1631
20C	600	450	135	LEL1664
20C	600	300	135	LEL1663
20C	600	150	135	LEL1661
20C	450	300	135	LEL1643
20C	450	150	135	LEL1641
20C	300	150	135	LEL1631



• Fixing Hardware for all cable ladder systems must be ordered separately.

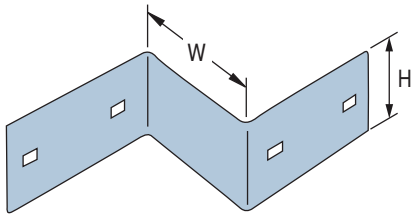
NEMA STEEL CABLE LADDER REDUCERS

Straight Reducer [HG]



Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12B	600	450	60	LEE1564
12B	600	300	60	LEE1563
12B	600	150	60	LEE1561
12B	450	300	60	LEE1543
12B	450	150	60	LEE1541
12B	300	150	60	LEE1531
16A	600	450	84	LEG1564
16A	600	300	84	LEG1563
16A	600	150	84	LEG1561
16A	450	300	84	LEG1543
16A	450	150	84	LEG1541
16A	300	150	84	LEG1531
20B	600	450	119	LEK1564
20B	600	300	119	LEK1563
20B	600	150	119	LEK1561
20B	450	300	119	LEK1543
20B	450	150	119	LEK1541
20B	300	150	119	LEK1531
20C	600	450	135	LEL1564
20C	600	300	135	LEL1563
20C	600	150	135	LEL1561
20C	450	300	135	LEL1543
20C	450	150	135	LEL1541
20C	300	150	135	LEL1531

Reducer Splice [HG]



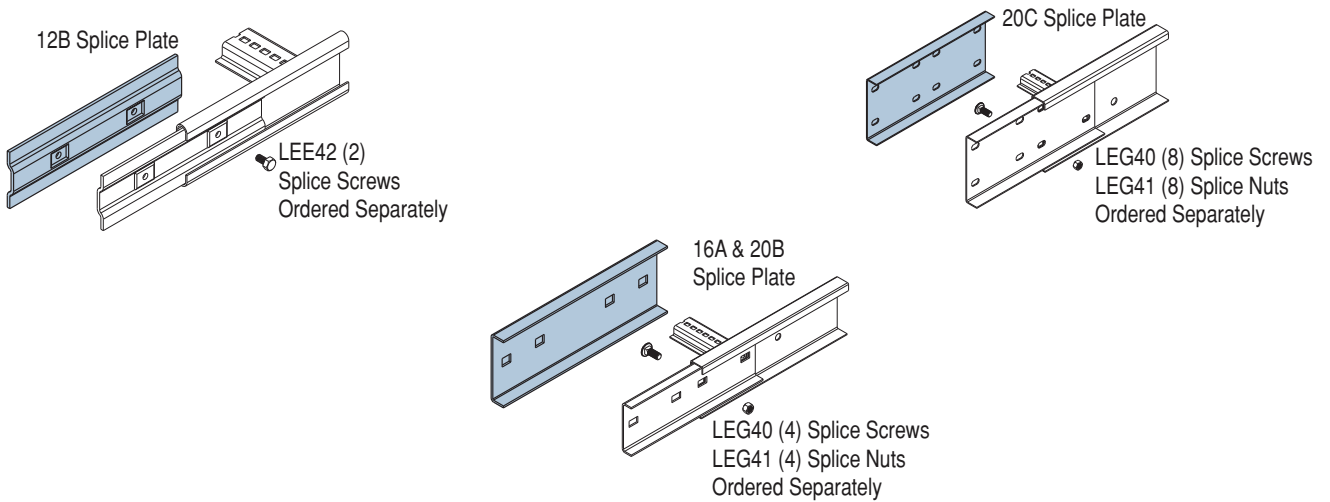
Reduction of ladder width is normally carried out using straight or offset reducers. Reducer Splice Plates are a flexible, cost effective alternative which bolt directly to the ladder side-rails.

Available for all steel cable ladder systems.

Type	Width "W"	Height "H"	Part No.
12B	75	60	LEE380
12B	150	60	LEE381
12B	300	60	LEE383
12B	450	60	LEE384
16A	75	84	LEG380
16A	150	84	LEG381
16A	300	84	LEG383
16A	450	84	LEG384
20B	75	119	LEK380
20B	150	119	LEK381
20B	300	119	LEK383
20B	450	119	LEK384
20C	75	135	LEL380
20C	150	135	LEL381
20C	300	135	LEL383
20C	450	135	LEL384

• Fixing Hardware for all cable ladder systems must be ordered separately.

Splice Plate [HG]

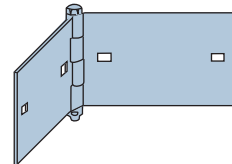
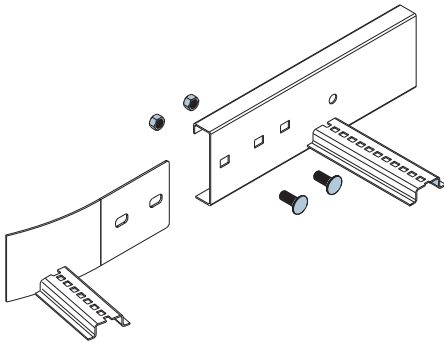


Type	Part No.
12B	LEE30
16A	LEG30
20B	LEK30
20C	LEL30

The neat fitting flanges and bolted configuration of Unistrut splice plates also reduces deflection at joints as the ladder is loaded. Unsightly dips or discontinuities along the ladder run are therefore avoided. Bolt holes in splice plates and ladder side-rails are elongated so that site misalignments as well as thermal expansion and contraction are catered for.

Fastener Quantities for Accessories

Hinged Horizontal Splice Plate [HG]



Steel Cable Ladder Accessories			
12B	Splice Screw (HG)	LEE42	4 per Bend, Riser or Reducer 6 per Tee 8 per Cross
16A, 16A-RI, 20B, 20B-RI	Splice Screw (HG) Splice Nut (HG)	LEG40 LEG41	8 per Bend, Riser or Reducer 12 per Tee 16 per Cross
20C, 20C-RI	Splice Screw (HG) Splice Nut (HG)	LEG40 LEG41	16 per Bend, Riser or Reducer 24 per Tee 32 per Cross

Type	Part No.
12B	LEE35
16A	LEG35
20B	LEK35
20C	LEL35

A fast and economical method of changing ladder direction where exact site dimensions must be met. Especially suitable where the angle is less than 45°, or larger angles where the cable bending radius is not important. Also provides a flexible alternative to standard accessory sizes and radii. Suits all Unistrut steel cable ladder systems.

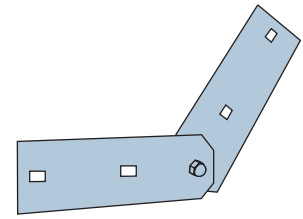
• Fixing Hardware for all cable ladder systems must be ordered separately.

NEMA STEEL CABLE LADDER ACCESSORIES

Hinged Vertical Splice Plate [HG]

Ideal for making changes in vertical level or direction. Easily adapts to exact site dimensions which may otherwise be difficult to achieve with fixed risers. Cables form their own bending radius spanning between adjacent end-rungs. Also used to form adjustable risers providing flexibility to adjust to any site restrictions.

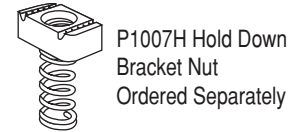
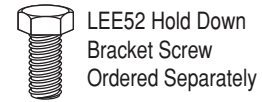
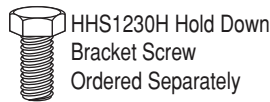
Type	Part No.
12B	LEE36
16A	LEG36
20B	LEK36
20C	LEL36



Hold Down Brackets [HG]

Hold Down Brackets provide rigid clamping for all steel cable ladder systems. The Brackets can be positioned at any point along the ladder length.

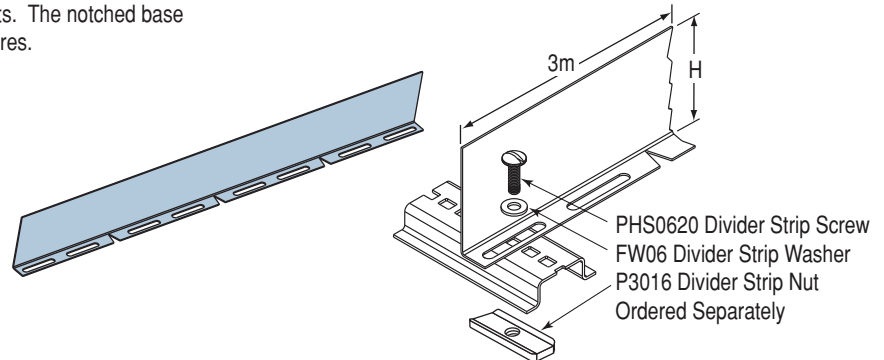
Type	Part No.
12B	LEE50
16A	LEG50
20B	LEG50
20C	LEG50



Divider Strip [GB/HG]

Used to separate cables of different voltages or circuits. The notched base permits forming to the required shape. Fix at 1m centres.

Type	Part No.	Height "H"
12B	LEE55	37mm
16A	LEM55	70mm
20B	LEM55	70mm
20C	LEM55	70mm



Aluminium Cable Ladder (ACL)

Wherever severe corrosion conditions are present, or a long maintenance free life is required, Unistrut aluminium cable ladder systems are the obvious choice.

Unistrut manufactures a complete range of NEMA Aluminium cable ladder systems. These provide a wide range of load and span combinations to suit the requirements of almost any installation.

Most frequently, aluminium cable ladders are selected because of their excellent performance in marine environments where salt spray or salt laden atmosphere is present. Applications such as wharves, coal loader conveyors or similar port facilities as well as coal mines, smelters, chemical processing plants and refineries are all typical users of aluminium cable ladders.

Splice Plates

The unique Unistrut aluminium system splice plate is close fitting and shaped so that it is retained neatly and firmly between mating flanges incorporated in the ladder side-rails. Initial deflection or “take-up” of the joint under load is thereby minimised, resulting in a tidy and rigid installation, free from excessive sag at splice points.

The splice design also permits up to 20mm of expansion and contraction movement at each joint – an important consideration with aluminium cable ladders – eliminates the need to place special expansion splices at predetermined intervals. The installation procedure for the splice connection is fast and simple.

Notes

- To attain maximum working load of the system, the following recommendations should be adopted:
- Do not splice single spans of ladder.
- Avoid splice joints in the vicinity of the end supports on continuous runs.
- Avoid splice joints directly over intermediate supports on continuous runs.
- Locate splice joints at the quarter span point between supports on continuous runs.

If in doubt, please consult your Unistrut Service Centre.

Accessories

All aluminium cable ladder systems are complemented by a full range of standardised fabricated accessories & fittings which are readily available.

Built-in Splice

The principal feature of all Unistrut cable ladder accessories is the ‘built-in’ plate. A shaped extension of the accessory side-rail permits direct connection to the straight ladder, eliminating the need for a separate splice component. The advantages of this method are:

- Minimised fixing hardware and components.
- When joining to a cut ladder, the accessory end acts as a convenient drill template for bolt holes.
- Simplified pre-planning, quantity take-offs and ordering.
- No left-over components.
- Strong and rigid joint.
- Faster installation.

Accessories are attached with the same fasteners as used for straight splice plates.

Elongated slots allow easier fit-up and permit adjustments in alignment to be absorbed.

Hold-Down Brackets

The general purpose hold-down bracket can be positioned at any point along ladder length, even in the situation where a rung and support member coincide. The bracket provides a large bearing area for the side-rail and permits free expansion movement to occur.

For side mounted ladders, or where rigid fixing of ladder is required, the rigid clamping bracket can be used.

Construction

Unistrut aluminium cable ladder systems are manufactured from high strength alloy 6106-T6 for all extruded components and 5005 for sheet or plate components. These alloys are suitable for marine applications and offer excellent all round corrosion resistance. All fasteners are made from 300 series grade of stainless steel for optimum corrosion resistance.

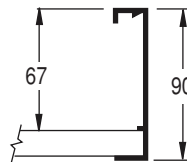
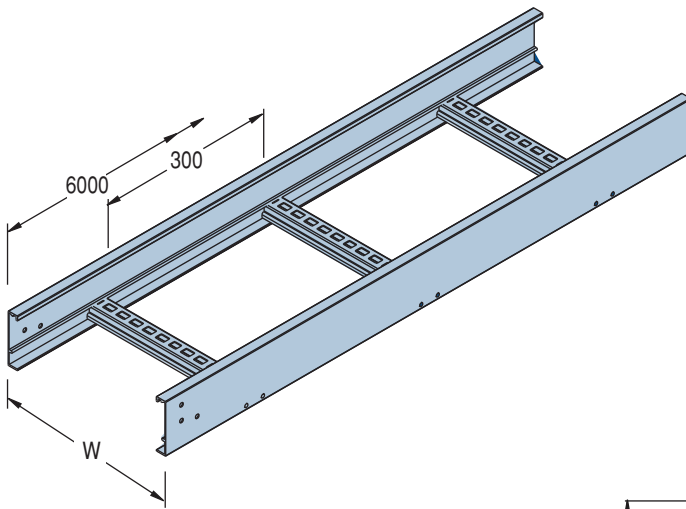
Each rung on 12A, 20A and 20C is attached to the side-rails with four stainless steel screws. In both assembly methods rung ends are held captive between flanges extruded into the side-rail, resulting in a strong and reliable connection.

C.K.D. Feature

Aluminium cable ladders with screwed rungs are also available in C.K.D. (completely knocked down) which provides a particular advantage when on-site assembly is necessary and in freight savings for remote areas.

NEMA 12A ALUMINUM CABLE LADDER

NEMA 12A Straight Tray [AL]



Cable Laying Depth: 67mm

Loading Data:

Basic Load Capacity
98kg/lin.m on 3.6m span

Length: 6m

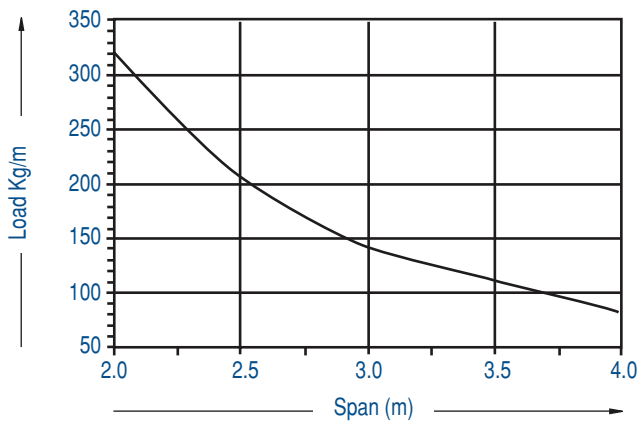
Rung Spacing: 300mm nominal

Standard Finish: Aluminium, Mill Finish

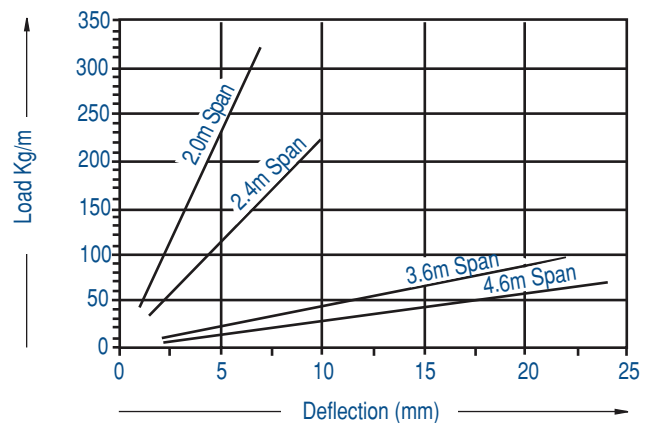
Dim "W"	Type	Part No.
150	12A	LAD101
300	12A	LAD103
450	12A	LAD104
600	12A	LAD106

• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph



Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing. Safety Factor = 1.5 on collapse load for single span.

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

NEMA 20A Straight Tray [AL]

Cable Laying Depth: 96mm

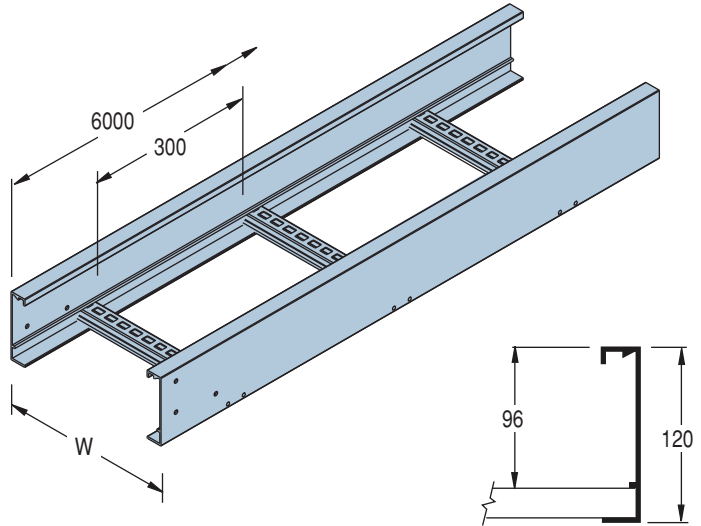
Loading Data:

Basic Load Capacity
 95kg/lin.m on 6m span
 352kg/lin.m on 3m span

Length: 6m

Rung Spacing: 300mm nominal

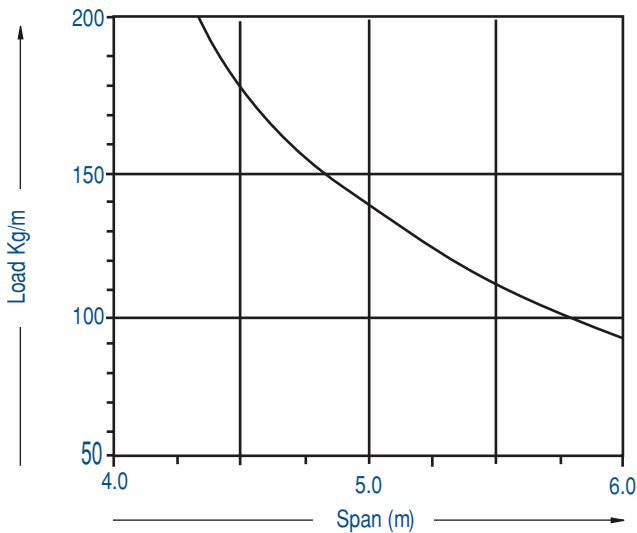
Standard Finish: Aluminium, Mill Finish



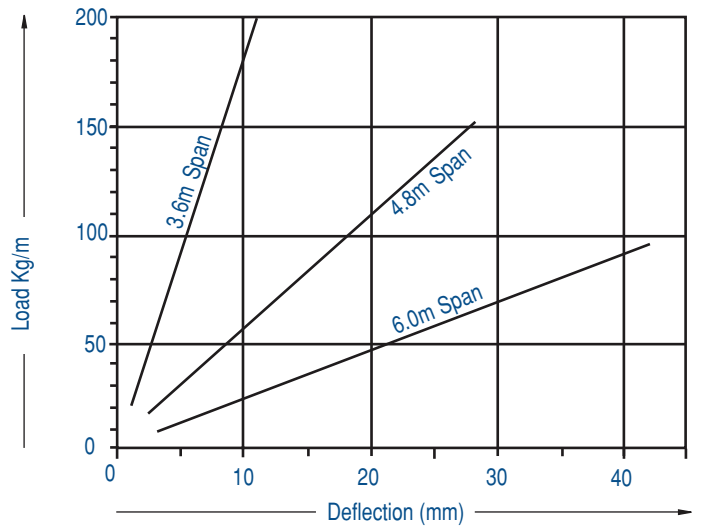
Dim "W"	Type	Part No.
150	20A	LAJ101
300	20A	LAJ103
450	20A	LAJ104
600	20A	LAJ106

• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph



Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing. Safety Factor = 1.5 on collapse load for single span.

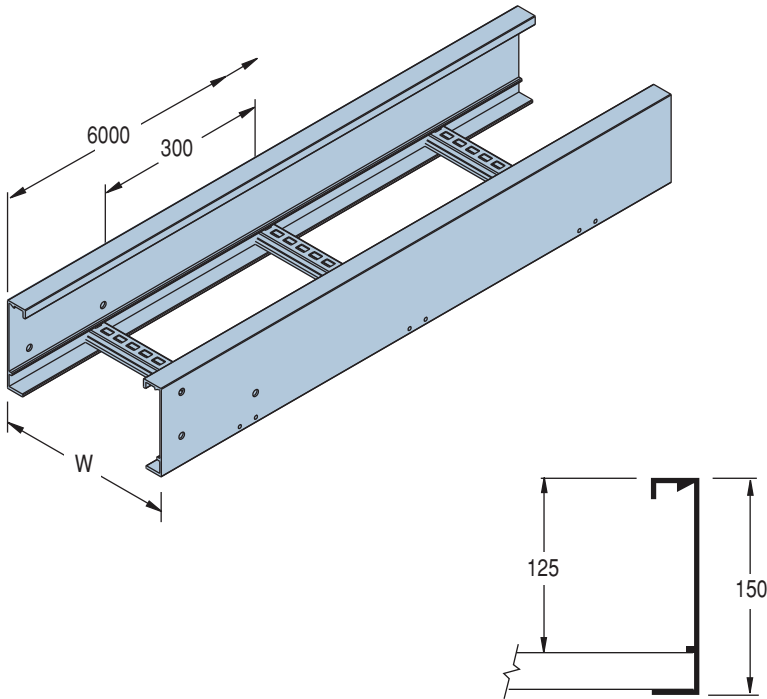
Deflections shown apply to the end-bays (ie. worst case) of a continuous ladder run. To find deflection of a single span, multiply by 2.5.

NEMA 20C ALUMINUM CABLE LADDER

NEMA 20C Straight Tray [AL]

Cable Support Systems

NEMA Cable Ladder



Cable Laying Depth: 125mm

Loading Data:

Basic Load Capacity
175kg/lin.m on 6m span

Length: 6m

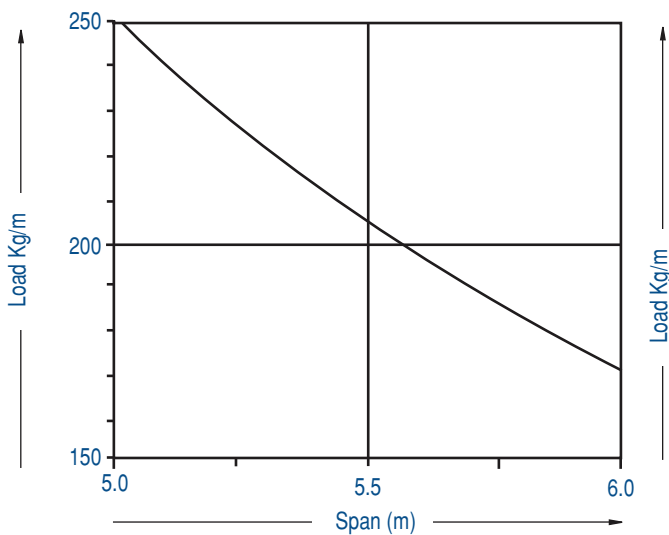
Rung Spacing: 300mm nominal

Standard Finish: Aluminium, Mill Finish

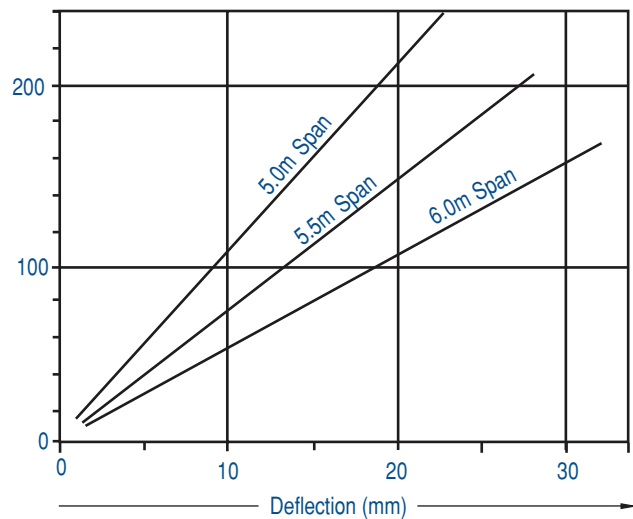
Dim "W"	Type	Part No.
150	20C	LAL101
300	20C	LAL103
450	20C	LAL104
600	20C	LAL106

• Splice plate & fixing screws are not included (order separately).

Allowable Load Graph



Deflection Graph



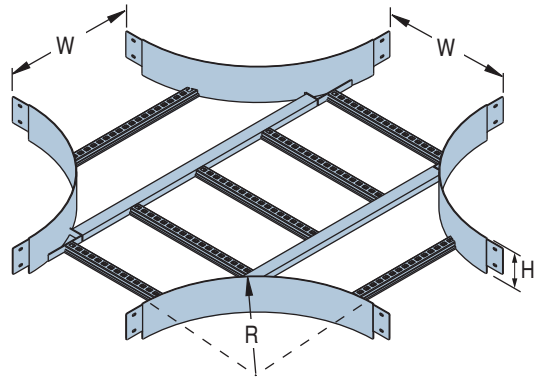
Allowable loads are determined generally in accordance with NEMA Standard VE1 and verified by testing.
Safety Factor = 1.5 on collapse load for single span.

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

NEMA ALUMINUM CABLE LADDER – CROSSES. BENDS, TEES

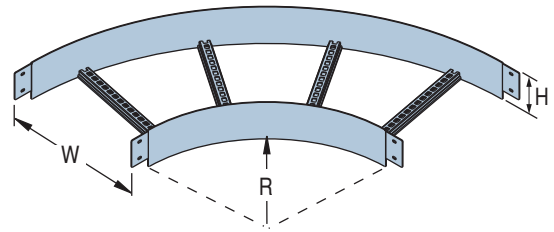
Cross [AL]

Type	Radius "R"	Width "W"	Height "H"	Part No.
12A	300	150	93	LAD181
12A	300	300	93	LAD183
12A	300	450	93	LAD184
12A	300	600	93	LAD186
20A	450	150	120	LAH181
20A	450	300	120	LAH183
20A	450	450	120	LAH184
20A	450	600	120	LAH186
20C	600	150	150	LAL181
20C	600	300	150	LAL183
20C	600	450	150	LAL184
20C	600	600	150	LAL186



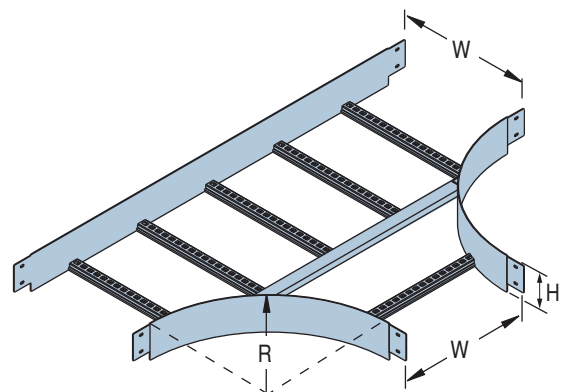
Flat Bend – 90° [AL]

Type	Radius "R"	Width "W"	Height "H"	Part No.
12A	300	150	93	LAD111
12A	300	300	93	LAD113
12A	300	450	93	LAD114
12A	300	600	93	LAD116
20A	450	150	120	LAH111
20A	450	300	120	LAH113
20A	450	450	120	LAH114
20A	450	600	120	LAH116
20C	600	150	150	LAL111
20C	600	300	150	LAL113
20C	600	450	150	LAL114
20C	600	600	150	LAL116



Tee [AL]

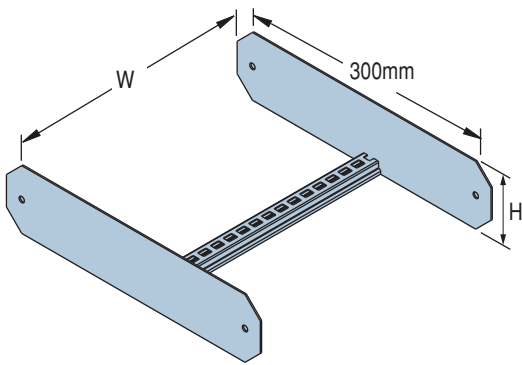
Type	Radius "R"	Width "W"	Height "H"	Part No.
12A	300	150	93	LAD191
12A	300	300	93	LAD193
12A	300	450	93	LAD194
12A	300	600	93	LAD196
20A	450	150	120	LAH191
20A	450	300	120	LAH193
20A	450	450	120	LAH194
20A	450	600	120	LAH196
20C	600	150	150	LAL191
20C	600	300	150	LAL193
20C	600	450	150	LAL194
20C	600	600	150	LAL196



• Fixing Hardware for all cable ladder systems must be ordered separately.

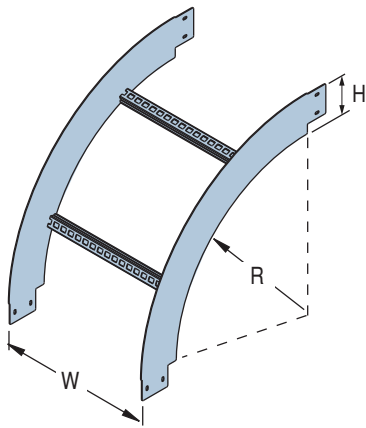
NEMA ALUMINUM CABLE LADDER – RISERS

Adjustable Riser [AL]



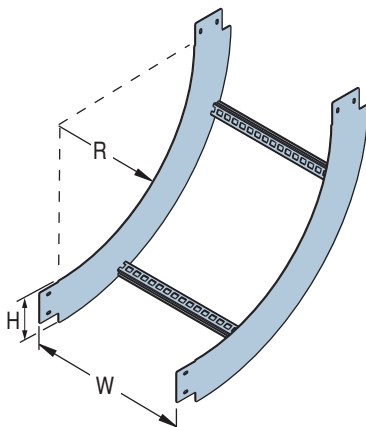
Type	Width "W"	Height "H"	Part No.*
12A	150	93	LAD141
12A	300	93	LAD143
12A	450	93	LAD144
12A	600	93	LAD146
20A	150	120	LAH141
20A	300	120	LAH143
20A	450	120	LAH144
20A	600	120	LAH146
20C	150	150	LAL141
20C	300	150	LAL143
20C	450	150	LAL144
20C	600	150	LAL146

External Riser – 90° [AL]



Type	Radius "R"	Width "W"	Height "H"	Part No.*
12A	300	150	93	LAD131
12A	300	300	93	LAD133
12A	300	450	93	LAD134
12A	300	600	93	LAD136
20A	450	150	120	LAH131
20A	450	300	120	LAH133
20A	450	450	120	LAH134
20A	450	600	120	LAH136
20C	600	150	150	LAL131
20C	600	300	150	LAL133
20C	600	450	150	LAL134
20C	600	600	150	LAL136

Internal Riser – 90° [AL]

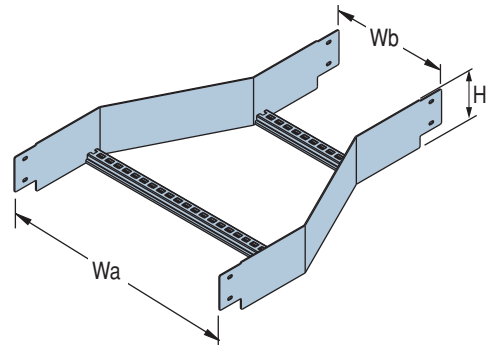


Type	Radius "R"	Width "W"	Height "H"	Part No.*
12A	300	150	93	LAD121
12A	300	300	93	LAD123
12A	300	450	93	LAD124
12A	300	600	93	LAD126
20A	450	150	120	LAH121
20A	450	300	120	LAH123
20A	450	450	120	LAH124
20A	450	600	120	LAH126
20C	600	150	150	LAL121
20C	600	300	150	LAL123
20C	600	450	150	LAL124
20C	600	600	150	LAL126

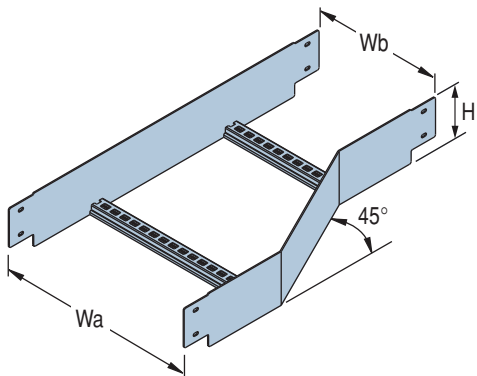
* Fixing Hardware for all cable ladder systems must be ordered separately.

Straight Reducer [AL]

Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12A	600	450	93	LAD1564
12A	600	300	93	LAD1563
12A	600	150	93	LAD1561
12A	450	300	93	LAD1543
12A	450	150	93	LAD1541
12A	300	150	93	LAD1531
20A	600	450	120	LAH1564
20A	600	300	120	LAH1563
20A	600	150	120	LAH1561
20A	450	300	120	LAH1543
20A	450	150	120	LAH1541
20A	300	150	120	LAH1531
20C	600	450	150	LAL1564
20C	600	300	150	LAL1563
20C	600	150	150	LAL1561
20C	450	300	150	LAL1543
20C	450	150	150	LAL1541
20C	300	150	150	LAL1531

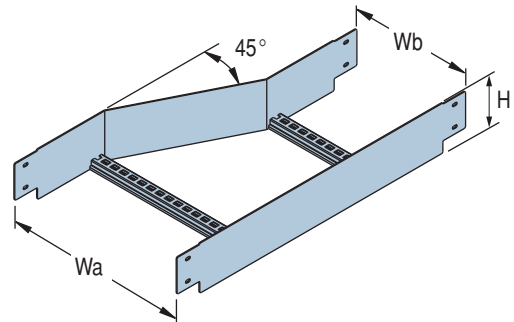


Offset Reducer – Left Hand [AL]



Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12A	600	450	93	LAD1764
12A	600	300	93	LAD1763
12A	600	150	93	LAD1761
12A	450	300	93	LAD1743
12A	450	150	93	LAD1741
12A	300	150	93	LAD1731
20A	600	450	120	LAH1764
20A	600	300	120	LAH1763
20A	600	150	120	LAH1761
20A	450	300	120	LAH1743
20A	450	150	120	LAH1741
20A	300	150	120	LAH1731
20C	600	450	150	LAL1764
20C	600	300	150	LAL1763
20C	600	150	150	LAL1761
20C	450	300	150	LAL1743
20C	450	150	150	LAL1741
20C	300	150	150	LAL1731

Offset Reducer – Right Hand [AL]



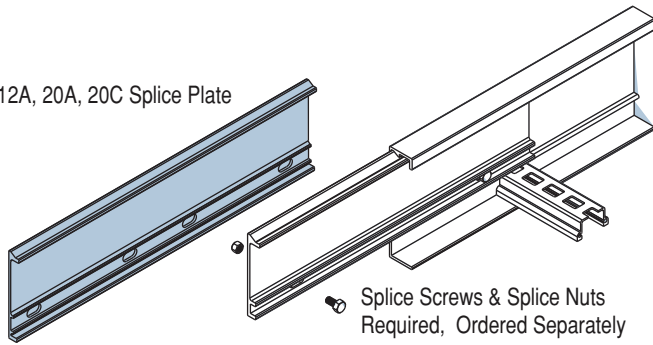
Type	Width "Wa"	Width "Wb"	Height "H"	Part No.
12A	600	450	93	LAD1664
12A	600	300	93	LAD1663
12A	600	150	93	LAD1661
12A	450	300	93	LAD1643
12A	450	150	93	LAD1641
12A	300	150	93	LAD1631
20A	600	450	120	LAH1664
20A	600	300	120	LAH1663
20A	600	150	120	LAH1661
20A	450	300	120	LAH1643
20A	450	150	120	LAH1641
20A	300	150	120	LAH1631
20C	600	450	150	LAL1664
20C	600	300	150	LAL1663
20C	600	150	150	LAL1661
20C	450	300	150	LAL1643
20C	450	150	150	LAL1641
20C	300	150	150	LAL1631

• Fixing Hardware for all cable ladder systems must be ordered separately.

NEMA ALUMINUM CABLE LADDER – ACCESSORIES

Splice Plate

12A, 20A, 20C Splice Plate



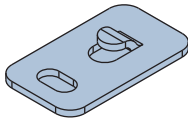
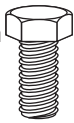
Splice Screws & Splice Nuts Required, Ordered Separately

Type	Part No.	Pairs of Splice Nuts and Splice Screws Required
12A	LAD30	2 Pairs of LAD42/LAD41
20A	LAH30	2 Pairs of LAD42/LAD41
20C	LAL30	4 Pairs of LAL42/LAL41

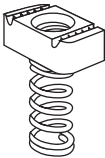
The unique Unistrut aluminium splice plate is close fitting and shaped so that it is retained neatly and firmly between mating flanges incorporated in the ladder-side rails.

General Hold Down Bracket

HHS1225SS Hold Down Bracket Screw

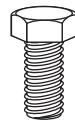


P1013SS Hold Down Bracket Nut
Ordered Separately

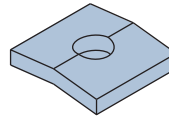


Type	Part No.
12A, 20A	LAD50
20C	LAL50

Rigid Hold Down Bracket



HHS1230SS Hold Down Bracket Screw

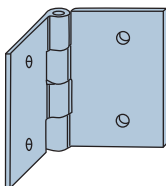


P1013SS Hold Down Bracket Nut
Ordered Separately

Type	Part No.
All Aluminium Systems	LAM50AL

General purpose hold-down bracket can be positioned at any point along ladder length, even in the situation where a rung and support member coincide. The bracket provides a large bearing area for the side-rail and permits free expansion movement to occur. For side mounted ladders, or where rigid fixing of ladder is required, the rigid clamping bracket can be used.

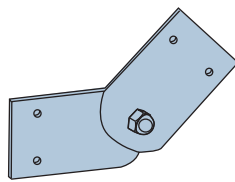
Hinged Horizontal Splice



Type	Part No.
12A	LAD35
20A	LAH35
20C	LAL35

A fast and economical method of changing ladder direction where exact site dimensions must be met. Especially suitable where the angle is less than 45°, or larger angles where the cable bending radius is not important. Also provides a flexible alternative to standard accessory sizes and radii. Suits all Unistrut aluminium cable ladder systems.

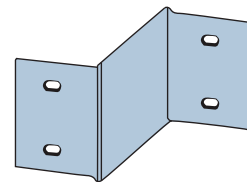
Hinged Vertical Splice



Type	Part No.
12A	LAD36
20A	LAH36
20C	LAL36

Ideal for making changes in vertical level or direction. Easily adapts to exact site dimensions which may otherwise be difficult to achieve with fixed risers. Cables form their own bending radius spanning between adjacent end-rungs. Also used to form adjustable risers providing flexibility to adjust to any site restrictions.

Reducer Splice

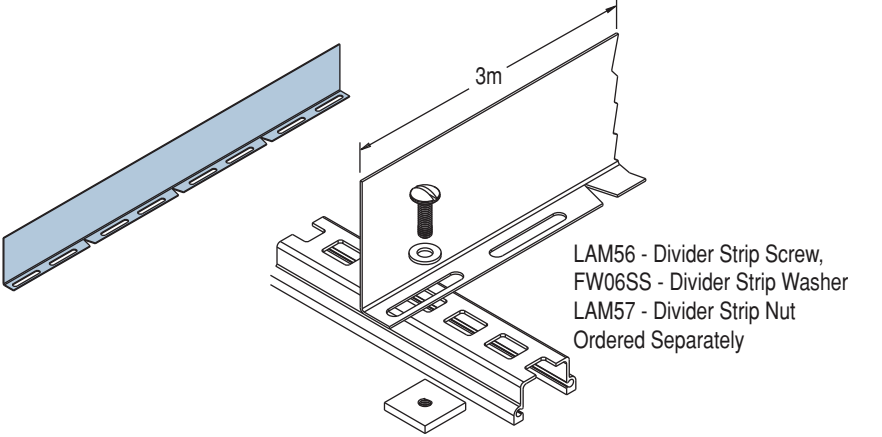


Type	Width (mm)	Part No.
12A	75W	LAD380
12A	150W	LAD381
12A	300W	LAD383
20A	75W	LAH380
20A	150W	LAH381
20A	300W	LAH383
20C	75W	LAL380
20C	150W	LAL381
20C	300W	LAL383

Reduction of ladder width is normally carried out using straight or offset reducers. Reducer splice plates are a flexible, cost effective alternative which bolt directly to the ladder side-rails. Available for all aluminium cable ladder systems.

• Fixing Hardware for all cable ladder systems must be ordered separately.

Divider Strip

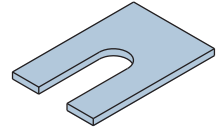


LAM56 - Divider Strip Screw,
FW06SS - Divider Strip Washer
LAM57 - Divider Strip Nut
Ordered Separately

Type	Part No.
All Aluminium Systems	LAM55

Divider Strip is used to separate cables of different voltages or circuits. The notched base permits forming to the required shape.

Interface Spacer



Type	Part No.
PVC White	LAM54
PVC Black	LAM54UV

Used to separate cable ladder and supports in corrosive environments.

Ladder Covers

Covers are normally specified where protection is required:

1. To safeguard against damage to cables and insulation from falling objects - dropped tools, discarded cigarettes, sparks or solid materials.
2. Covers protect cable insulation and fixings (plastic ties etc.) from harmful effects of ultra-violet light and/or weathering deterioration.
3. In areas where high levels of airborne particles are present, covers prevent accumulation of dust or other debris on cables which may cause heat build up, fire hazards or absorb moisture, which may shorten the life of the installation.

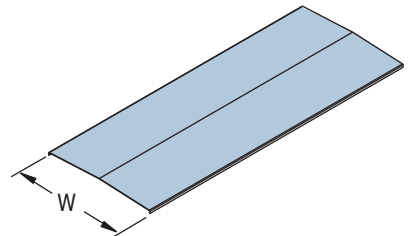
Availability

Standard flat covers are available for all Unistrut cable ladder systems. Standard length is 3 metres. Straight, peaked or ventilated covers are available to special order.

Material

- Steel Systems:** Galvabond, hot-dip galvanised steel sheet to AS1397.
- Aluminium Systems:** Aluminium Alloy 5005. Suitable for marine applications and compatible with the 6106-T6 alloy used in ladders.

Standard Cover



The most common type used because they afford maximum protection to cables at the lowest cost.

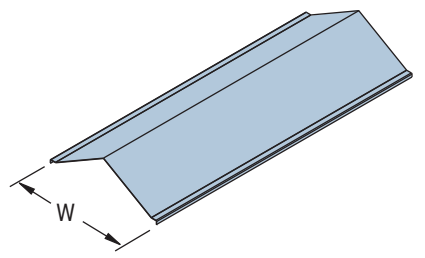
Alum. Covers - Standard

Type	Nominal Width	Width "W"	Part No.
12A/20A/20C	150	154	LAM6013
12A/20A/20C	300	304	LAM6033
12A/20A/20C	450	454	LAM6043
12A/20A/20C	600	604	LAM6063

Steel Covers - Standard

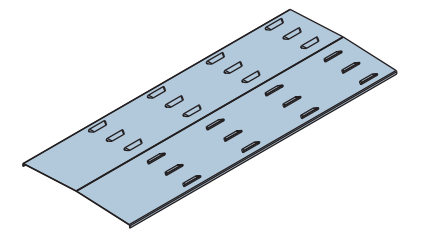
Type	Nominal Width	Width "W"	Part No.
12B	150	176	LEE6013
12B	300	326	LEE6033
12B	450	476	LEE6043
12B	600	626	LEE6063
16A	150	201	LEG6013
16A	300	351	LEG6033
16A	450	501	LEG6043
16A	600	651	LEG6063
20B/20C	150	215	LEK6013
20B/20C	300	365	LEK6033
20B/20C	450	515	LEK6043
20B/20C	600	665	LEK6063
20B-RI/20C-RI	150	154	LEM6013
20B-RI/20C-RI	300	304	LEM6033
20B-RI/20C-RI	450	454	LEM6043
20B-RI/20C-RI	600	604	LEM6063

Peaked Cover



Used in very dusty situations where the self-cleaning effect of sloping sides prevents excessive dust accumulations. The larger air-space above the cables also assists with the dissipation of heat.

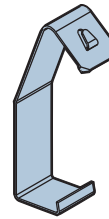
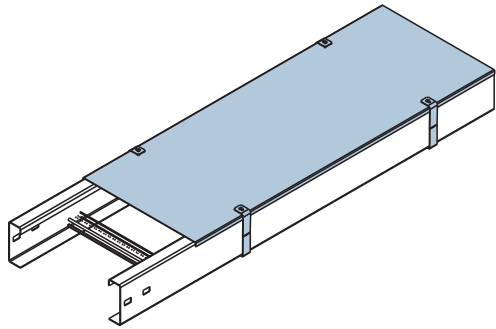
Ventilated Cover



Should be used wherever reasonable protection for cables is required and where there is also a primary requirement to allow for the escape of heat generated by cables.

NEMA STEEL & ALUMINUM CABLE LADDER COVERS

Cable Ladder Cover Fixings



Covers are retained in position by means of cover clips as illustrated. Manufactured from high strength stainless steel, these unique clips, which have no thread components to freeze up, are very quickly installed and are also easily removed or replaced at a later date.

One size of clip for each ladder system suits both straight and accessory covers.

Recommended Spacing For Cover Clips

Service conditions	Design Wind velocity, Vz (AS1170)	Ladder Width, mm			
		600	450	300	150
Up to and including exposed external locations	50m/s	1.2m	1.2m	1.2m	1.2m
Cyclonic Areas	65m/s	0.6m	0.8m	1.2m	1.2m

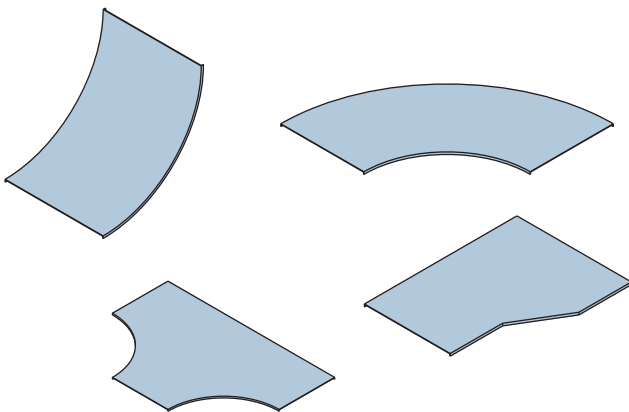
SS Clips For Steel Covers

Type	Part No.
12B	LEE90
16A	LEG90
20B	LEK90
20C	LEL90

SS Clips For Aluminum Covers

Type	Part No.
12A	LAD90
16A	LAH90
20C	LAL90

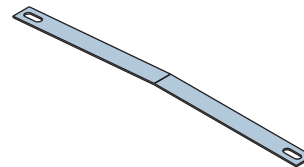
Accessory Covers



Flat Covers are available to match shaped accessories of all Unistrut Cable Ladder Systems, in both steel and aluminium. Materials are the same as for straight covers.

Note: Flat covers are available to match accessories of all Unistrut NEMA Cable Ladders in both steel and aluminum material and are the same as for the straight covers.

Cover Straps [HG]



Type	Ladder Width	Part No.
16A	150	LEG931
16A	300	LEG933
16A	450	LEG934
16A	600	LEG936
20B	150	LEK931
20B	300	LEK933
20B	450	LEK934
20B	600	LEK936

Hook Bolt & Wing Nut [MG]

Note: Two pair of hook bolts and wing nuts are used to attached the Cover Straps. Hook bolt and wing nut sold separately.



Part No.	Description
LEK8873MG	Hook Bolt
WN10MG	Wing Nut M10

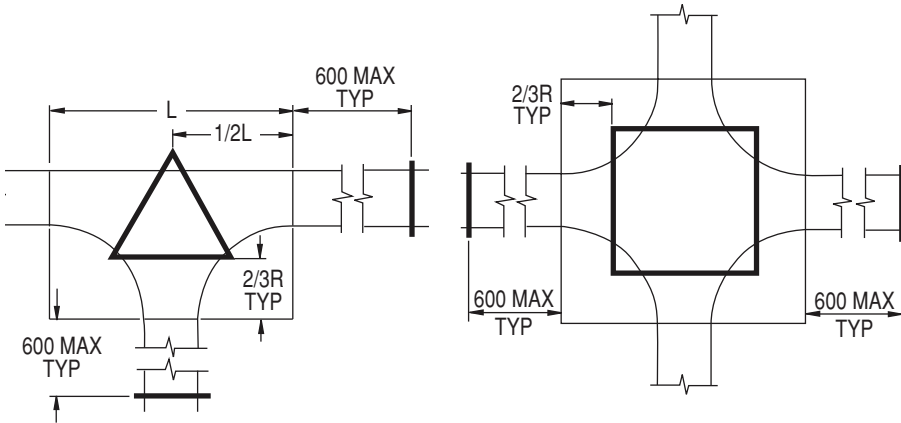
Accessories for all Unistrut cable ladder systems are available in the four standard widths - 150, 300, 450 or 600mm.

System	Std. Radius
12B SCL and 12A ACL	300mm
16A SCL and 20A ACL	450mm
20B, 20C SCL and 20C ACL	600mm

Fixed bends and Internal or External Risers are readily available with a 90° angle. Other angles (30°, 45° or 60°) and other radii (300, 450, 600 or 900mm) can be supplied on special request. The radii also applies to Tees and Crosses.

All support locations below are in accordance with NEMA standard VE 1.

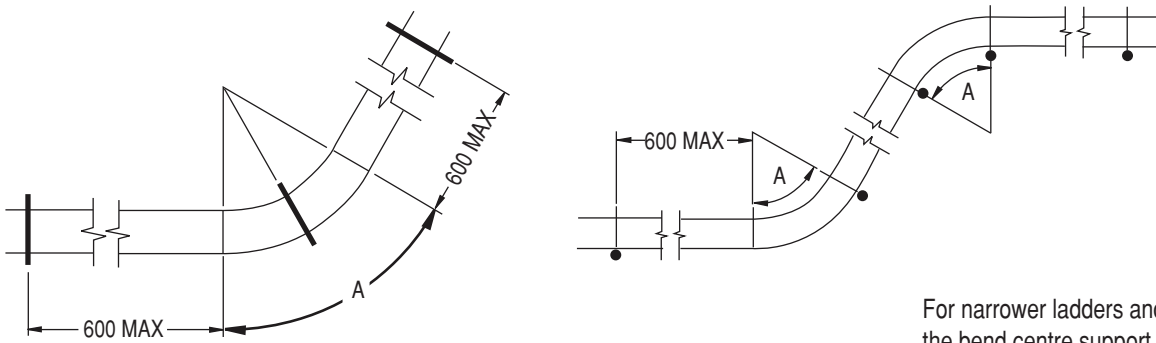
Tees & Crosses



For smaller radius accessories and / or lightly loaded ladders, the support methods shown may be reduced or even eliminated.

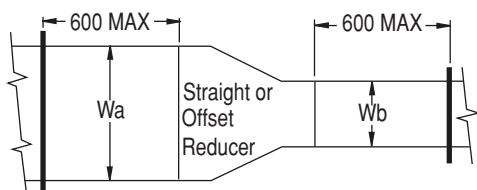
This is best determined at the point of installation or consult your local Unistrut Service Centre.

Risers & Bends



For narrower ladders and smaller angles, the bend centre support may be deleted.

Straight or Offset Reducers



Straight Reducer plus left and right hand offset reducers are available for all Unistrut Cable Ladder systems.

Major Width: Wa 300, 450, 600, 450, 600, 600

Minor Width: Wb 150, 150, 150, 300, 300, 450

Reducer splice plates are also available for all ladder systems.