

# F.H.BRUNDLE SERVING THE TRADE SINCE 1889

"SAFETY AT THE HIGHEST LEVEL"

# **ROOF WALK**

PERMANENT ROOF WALKWAY SYSTEM

**INSTALLATION INSTRUCTIONS** 



MAINTENANCE ACCESS WALKWAY FOR FLAT, PROFILE & STANDING SEAM ROOF TOPS.

COMPLIANT WITH THE TEST REQUIREMENTS OF EN516 – CLASS 1-C

# **0.1 INSTALLATION**

# **OVERVIEW**

This section is broken down into the following subjects:

Subject	Page
Copyright & Amendment service	3
Owner's duty of care	3 - 4
Personnel requirements	4
Selecting a location for installation	5
Checking the Walkway System's components	6 - 17
Installing the Walkway System	18 - 29
Final inspection before use	30

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## **AMENDMENT SERVICE**

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# 0.2 OWNER'S DUTY OF CARE

# **CONTENTS**

In this section, you will be able to familiarise yourself with the tasks and obligations of the owner or employer with regard to working with the Walkway System.

# **DEFINITION OF "AUTHORISED PERSON"**

A person is regarded as an authorised person if he / she is commissioned to carry out certain types of work on or using the Walkway System in accordance with these instructions.

# PROTECTION FOR PERSONNEL

In particular, the owner or employer must ensure that any personal protection equipment required:

- is available for use
- is checked regularly

#### INSTRUCTION AND TRAINING

In particular, the owner or employer must ensure that:

- installation personnel are instructed in all relevant aspects of health and safety at work and environmental protection before starting work for the first time and also at least once a year after that
- a full set of legible Installation instructions are provided to the installation personnel prior to them commencing work
- all relevant personnel have familiarised themselves with the contents of these installation instructions before installing any parts of the system

# 0.3 PERSONNEL REQUIREMENTS

# **CONTENTS**

The manufacturer's requirements regarding installation and Repair Personnel for installing the Walkway System are as follows.

## **DEFINITION OF A "COMPETENT PERSON"**

Competent people are those who have sufficient knowledge of the system to be able to Install or check it on account of their specialist training and experience and are familiar with the relevant regulations, guidelines and generally recognised rules of practice – e.g. Health & Safety Guidelines, accident prevention regulations and suchlike – to such an extent that they can carry out assembly and assess whether or not the system under test is safe to be used.

The owner / employer is responsible for selecting a competent person.

## **DUTIES OF THE INSTALLATION PERSONNEL**

The installation personnel must carry out the following duties:

• install the system and check to make sure that it is working safely and has no faults

#### REQUIREMENTS RELATING TO INSTALLATION PERSONNEL

Installation personnel must meet the following requirements in order to be able to carry out their duties:

- they must have received instruction from the owner or employer
- they must have sufficient knowledge of the English Language in order to be able to understand these installation instructions
- they must be free from any disability that may effect their ability to install this system or understand these instructions

# 0.4 SELECTING A LOCATION FOR INSTALLATION

## **CONTENTS**

Necessary requirements for the installation site.



# **DANGER!**

The condition of the installation site has a decisive influence on the safe functioning of the Walkway System. If the prerequisites are not met at the site of installation, then do not install the system until you have consulted the manufacturer.

• If you cannot be certain of the load-bearing capacity of the roof, then contact a structural engineer before starting construction

# REQUIREMENTS RELATING TO THE INSTALLATION SITE

The installation site must meet the following requirements:



Criterion Requirement	Requirement	
Roof construction	Composite, Trapezoidal Metal Profile, Standing Seam & Flat Membrane / Concrete / Asphalt.	
Permissible roof pitch	Max. Up to 35° for Traverse – Up to 35° for Steps.	
Roof surface	Only, Composite, Trapezoidal Metal Profile and Standing Seam, Flat Membrane / Concrete / Asphalt roofs are permissible for this installation. The surface of the roof must be free from loose deposits, oil, grease, algae, gravel & accumulated water.	
Weather conditions	The roof must be free from snow and ice.  If there is the risk of water freezing over during assembly or it starts to snow, then the system must not be installed.  Walkways must not be installed if the wind speed is greater than 23 mpl	

# 0.50 CHECKING THE WALKWAY SYSTEM'S COMPONENTS

#### **CONTENTS**

An overview of all the parts which you need in order to install the system properly.



# **DANGER!**

If some of the parts listed in the parts list or on the delivery note are missing or damaged, then you must replace them with original parts. Contact the manufacturer to obtain these.

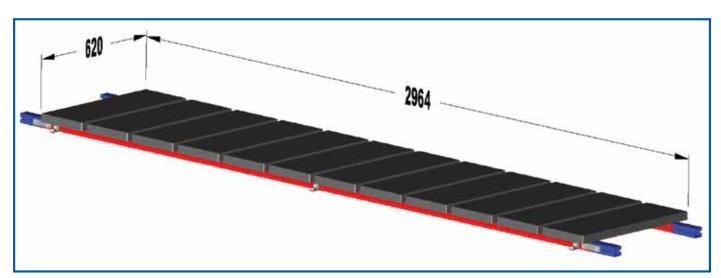
# DESIGNATION AND FUNCTION OF THE COMPONENTS FOR STANDARD SYSTEMS

The Walkway System consists of the following modules & individual components. The exact number of individual components depends on the length and construction of the Walkway System.

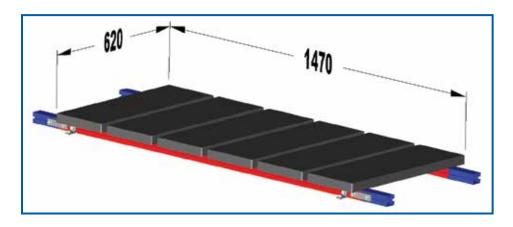
# NOTE:

A complete list of all parts and details on the total weight of the fall prevention system are provided with the delivery. The load-bearing capacity of the roof must be equal to or exceed the capacity specified.

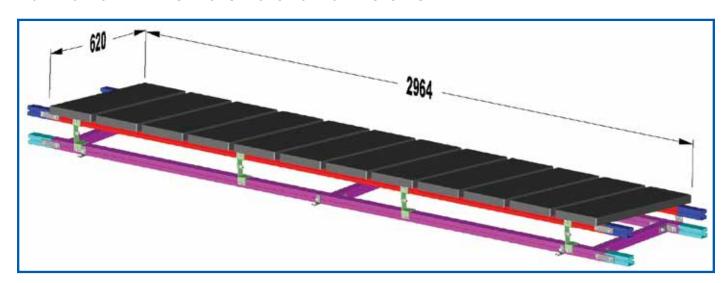
## "16KWM1" - 3M TRAVERSE MODULE FOR UP TO 5 DEGREE SLOPES



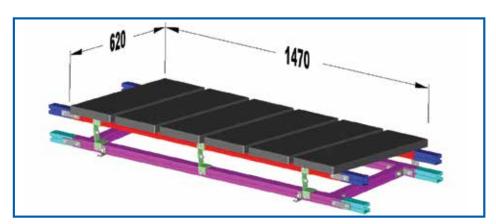
"16KWM2" - 1.5M TRAVERSE MODULE FOR UP TO 5 DEGREE SLOPES



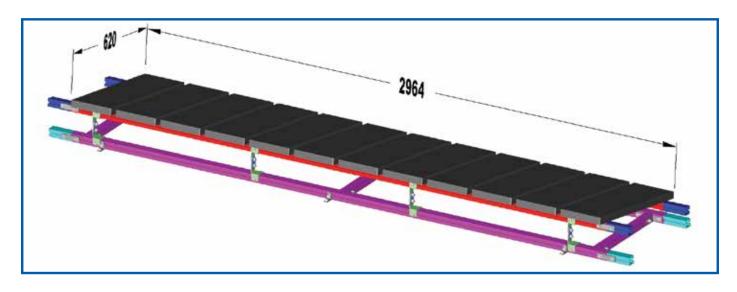
"16KWM3" - 3M TRAVERSE MODULE 5 TO 7.5 DEGREE SLOPES



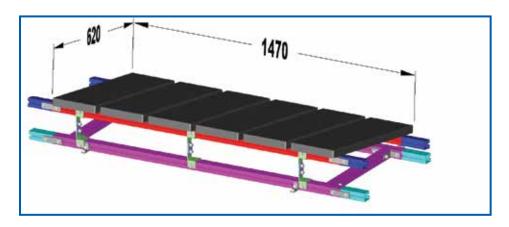
"16KWM4" - 1.5M TRAVERSE MODULE 5 TO 7.5 DEGREE SLOPES



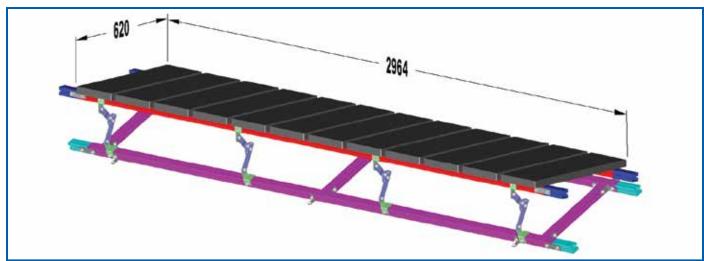
"16KWM5" - 3M TRAVERSE MODULE 7.5 TO 15 DEGREE SLOPES



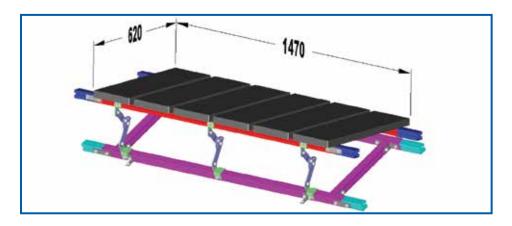
"16KWM6" - 1.5M TRAVERSE MODULE 7.5 TO 15 DEGREE SLOPES



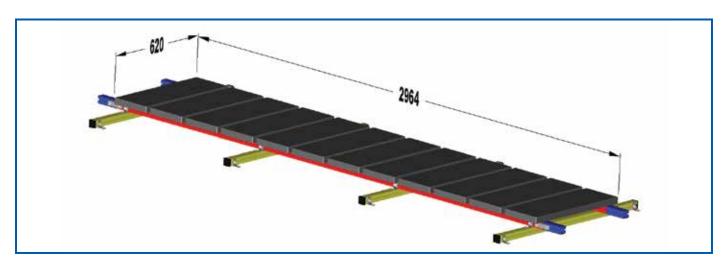
"16KWM7" - 3M TRAVERSE MODULE 15 TO 35 DEGREE SLOPES



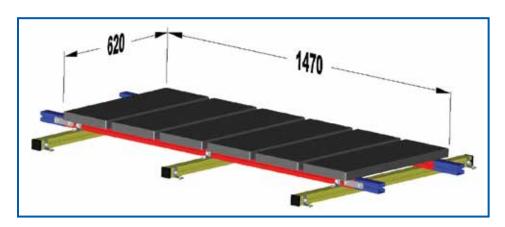
"16KWM8" - 1.5M TRAVERSE MODULE 15 TO 35 DEGREE SLOPES



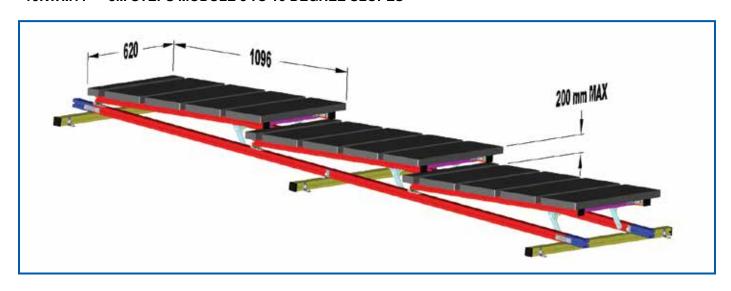
"16KWM9" - 3M LONGITUDINAL MODULE UP TO 5 DEGREE SLOPES



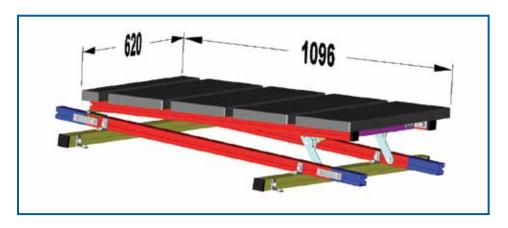
"16KWM10" – 1.5M LONGITUDINAL MODULE UP TO 5 DEGREE SLOPES



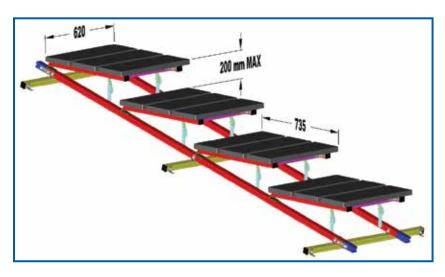
"16KWM11" - 3M STEPS MODULE 5 TO 10 DEGREE SLOPES



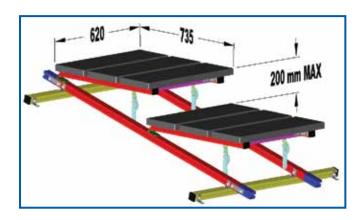
"16KWM12" – 1.1M STEPS MODULE 5 TO 10 DEGREE SLOPES



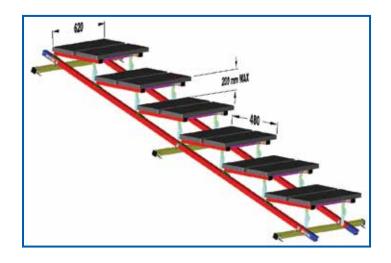
"16KWM13" - 3M STEPS MODULE 10 TO 15 DEGREE SLOPES



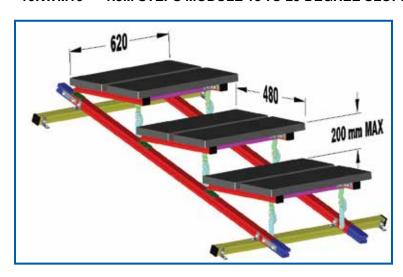
"16KWM14" - 1.5M STEPS MODULE 10 TO 15 DEGREE SLOPES



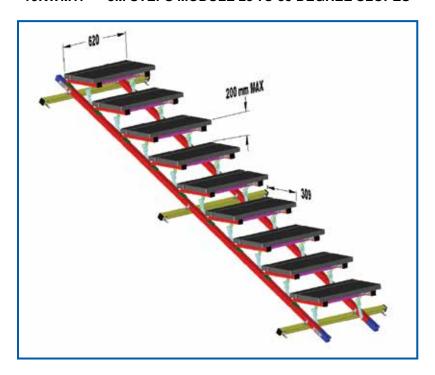
"16KWM15" – 3M STEPS MODULE 15 TO 25 DEGREE SLOPES



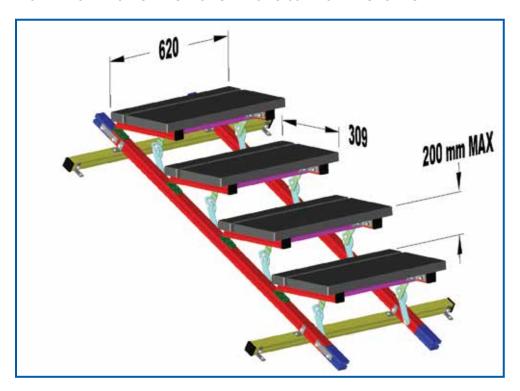
"16KWM16" - 1.5M STEPS MODULE 15 TO 25 DEGREE SLOPES



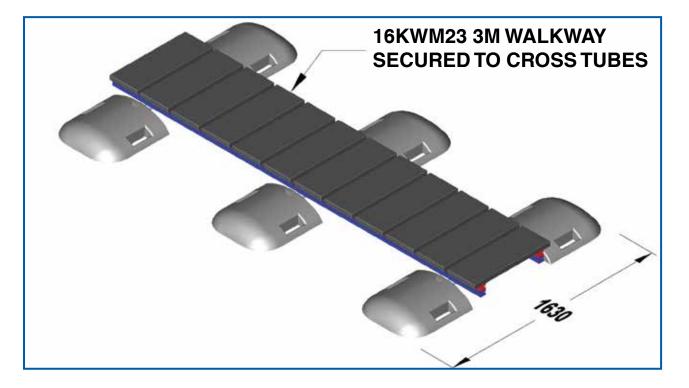
"16KWM17" - 3M STEPS MODULE 25 TO 35 DEGREE SLOPES



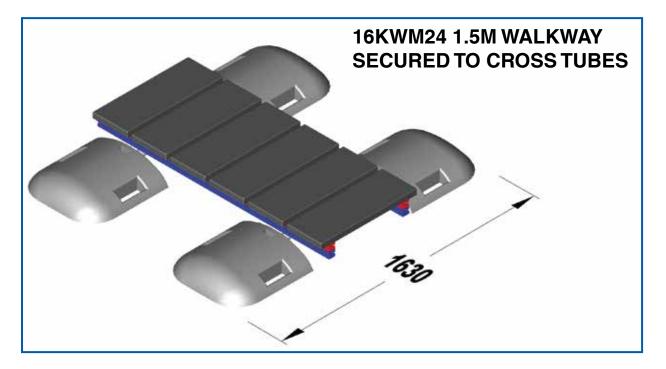
"16KWM18" - 1.5M STEPS MODULE 25 TO 35 DEGREE SLOPES



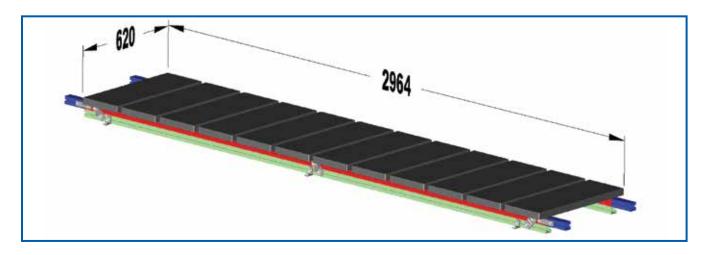
"16KWM20" – 3M FREE STANDING MODULE – 0° TO 5° - 95 MPH WIND



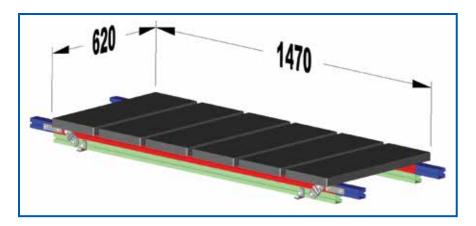
"16KWM22" – 1.5M FREE STANDING MODULE – 0° TO 5° - 95 MPH WIND



"16KWM23" - 3M RAISED TRAVERSE MODULE FOR UP TO 5 DEGREE SLOPES



"16KWM24" - 1.5M RAISED TRAVERSE MODULE FOR UP TO 5 DEGREE SLOPES



# INDIVIDUAL COMPONENTS FOR ON-SITE SPECIALS AND REPLACEMENT SPARE PARTS.

	Designation	Function	Comments
1		Custom hinges Width = 40.00 mm Height = 91.00 mm Weight = 0.93 Kg Fitted with 8 off No 10 x 15 mm Self tapping Screws or Ø 4.8 mm x 15mm Aluminium Rivets. OR 2 No M8 x 20 Hex HD Screws, Nuts, Washers	Used to construct angular adjustment in traverse Frames and Steps.
2	•	Straight Connector Width = 25.00 mm Length = 100.00 mm Weight = 0.104 Kg	In-line joiner plate for connecting modules together.
3		Retaining Bracket Width = 20.00 mm Length = 39.00 mm Weight = 0.058 Kg	90 degree Aluminium Bracket used to secure Module frames to metal roof structure.
4		90 Deg Corner Bracket Width = 25.00 mm Height = 53.50 mm Weight = 0.1 Kg	Used to connect Bracing Bars to main lower extrusions on traverse sections.
5		Standing Seam clips. Width = 45.00 mm Height = 50.00 mm Weight = 0.2 Kg	Steel Fixing Bracket to secure module Frameworks to Roof.
6		Standing Seam Bracket Width = 20.00 mm Length = 68.00 mm Weight = 0.068 Kg	Aluminium Fixing Bracket to Extrusion adapter plate.
7		Traverse Support Plate bolted to extrusions by means of M8 hex head screws, Width = 49.00 mm Height = 83.5 mm Weight = 0.180 Kg	Steel Connection adapter between Rotating arms and Main traverse Extrusions.
8		Rotating Arms Width = 30.00 mm Length = 230.00 mm Weight = 0.365 Kg	Steel Angular adjustment brackets for Traverse and Step modules.

# INDIVIDUAL COMPONENTS FOR ON-SITE SPECIALS AND REPLACEMENT SPARE PARTS.

	Designation	Function	Comments
9		Horizontal beam for the system Width = 40.00 mm Height = 40.00 mm Std Length = 3000 mm Weight = 2.64 kg / 3m Lth	Aluminium Extrusion for constructing Framework support.
10		Width = 225.00 mm Height = 35.00 mm Std Length = 620.00 mm Weight = 1.63 kg approx.	Glass reinforced Nylon Moulding which forms walkway surfaces.
11		10mm Deep Push on Plastic Cap to cover the end of the Horizontal Beam Extrusion to prevent ingress of foreign objects.	Black Vinyl Semi flexible Plastic.
12		Extended Fixing Bracket Width = 30.00 mm Length = 95.00 mm Weight = 0.15 Kg	Steel Fixing Bracket to secure module Frameworks to Profile Roof.
13	16WPF1 – Fixing PK	"16WPF1"- 3m Traverse Module for Profile Roofs.	
14	16WPF2 – Fixing PK	"16WPF2"- 1.5m Traverse Module for Profile Roofs.	
15	16WPF3 – Fixing PK	"16WPF3"– 3m Long. / Step Module for Profile Roofs.	
16	16WPF4 – Fixing PK	"16WPF4"– 1.5m Long. / Step Module for Profile Roofs.	
17	16WPF5 – Fixing PK	"16WPF5"- 3m Traverse Module for Standing Seam Roofs.	
18	16WPF6 – Fixing PK	"16WPF6"- 1.5m Traverse Module for Standing Seam Roofs.	
19	16WPF7 – Fixing PK	"16WPF7"- 3m Long. / Step Module for Standing Seam Roofs.	
20	16WPF8 – Fixing PK	"16WPF8"- 1.5m Long. / Step Module for Standing Seam Roofs.	
21	16WPF9 – Fixing PK	"16WPF9"- Joiners.	
22	16WPF10 – Spares PK		

# 0.6 INSTALLATION OF WALKWAYS

#### CONTENTS

Description of the standard construction:

#### **DANGER!**

- if you have been sent a detailed installation diagram with the delivery, you must not deviate from this installation diagram as otherwise the safe functioning of the Walkway System cannot be guaranteed
- the Walkway System must not be installed on roofs, which are covered with snow or ice. The roof surface must not become covered with snow or ice during assembly
- do not use any non-approved or damaged parts for assembly
- always use all the parts supplied. If there is insufficient space or there is insufficient load-bearing capacity at the site
  of installation, then you must not use the Walkway System
- competent assembly personnel may only undertake Walkway installations and must use Personal Protective Equipment to prevent falls from heights

#### **BEFORE YOU START**

Before you can start on the installation, you must have carried out the following tasks:

- check the individual parts are there and not damaged
- select a suitable location for installation
- remove any oil, grease and loose debris from the roof
- during installation at least two people should be on the roof at all times. Prior to the Walkway System being erected, all personnel on the roof should ensure they stay at least 2m from the edge of the roof at all times. Installers should wear a full body safety harness and lanyard, which should be suitably attached to a safe anchor point at all times. The lanyard must be short enough to prevent installers reaching the edge of the roof (so that they are never in a position where they may all from the roof)
- the above recommendations are made in addition to the following: installers and users must comply with all relevant health and safety regulations. In the U.K., particular attention should be drawn to the following H.S.E. publications: -
- i) construction summary sheet safety in roofwork
- ii) construction sheet No 21 work on flat roofs: protection against falls
- U.K. based installers / users may obtain copies of the above publications free of charge from their Health and Safety Executive area office

## **TOOLS REQUIRED**

You will need the following in order to install the Walkway System:

- deep socket 8mm
- torque wrench 10 60 Nm approx
- drill with suitable 5mm drill bit (for on site hinges for special steps)
- tape measure / marker pen
- metal cutting chop saw (on site specials)
- level / magnetic plum line
- pop riveter (on site special stair cases only)
- impact driver for 8mm socket
- 13mm socket
- 13mm spanner

## **RAISING THE SECTIONS**

IMPORTANT! AT LEAST TWO users must raise each walkway section.

When each Walkway System (3.0m max.) is complete, it can be moved and fixed into position.

This is accomplished by following the steps below:

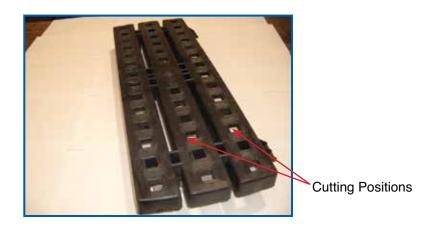
- a) each user is to stand as near to the end of the 3m runs and lift into position
- b) fasten Walkway System to roof using relevant fixings depending on roof profiles

# PRELIMINARY REMARKS RELATING TO THE INSTALLATION OF THE WALKWAY SYSTEM FOR RUNS LESS THAN 3M LONG OR ROOF SURFACES DIFFERENT FROM THAT IN 0.4

You must note the following points if you are intending to install a run in the above situation: You must contact your local branch if you intend to install a system with a total length of less than 3m.

## INSTALLATION DETAILS FOR THE TREADS.

- treads are to be fixed to extrusions with 1 hex. flange self drilling screw fixed either side in centre holes
- all treads are to be butted against each other using tread lugs as spacers (30mm max gap)
- treads can be cut down to suit unusual distances
- please note minimum going distance for step configurations in accordance with EN516 is 250mm



## INSTALLING THE 3M PLUS WALKWAY SYSTEMS.

# POSITIONING THE LONGITUDINAL WALKWAY - COMPOSITE AND TRAPEZOIDAL METAL PROFILED ROOFS.

Install the pre-assembled longitudinal walkway. Position load bearers on roof no more than 1500mm centres in designated area. In the case of pre-assembled units this will already have been done. Remove the nut and washers from the six screws fitted on the outside of the aluminium extrusion which are not securing anything and place to one side. Apply weathering strip to underside of retaining brackets WW3939030. Place onto M8 screw and loosely secure in position with the M8 nut and M8 flat & spring washers previously taken off. Adjust position of brackets to align with crowns of roof profile. Using the hex. flange self drilling screws fasten assembly to roof. You must note the following points during assembly:

- make sure all retaining brackets have weathering strips applied to underside, when fastening load bearers to the roof
- M8 screws are torqued up to 15 Nm once the walkway is in position
- use a level and check the treads are within 3° of the horizontal
- make sure load bearers are long enough to straddle across at least two crowns of the profiled roofing

## POSITIONING THE TRAVERSE WALKWAY - STEP 1 - COMPOSITE AND TRAPEZOIDAL METAL PROFILED ROOFS.

Install the pre-assembled traverse walkway. Position the walkway on roof in designated area. Apply weathering strip to underside of retaining brackets. Fix brackets to crowns of roof in suitable locations to correspond with securing screws in the downside lower walkway extrusion. Fix the traverse walkway to roof profile the same way as the longitudinal versions. Remove the treads from walkway that correspond with the positions of the upside lower walkway extrusion fixing screws. Fix retaining brackets as previously installed brackets. Replace the previously removed treads back in position.

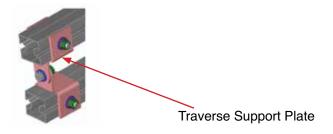
You must note the following points during assembly:

- · make sure all retaining brackets have weathering strips applied to underside
- M8 screws are torqued up to 15 Nm once the walkway is in position

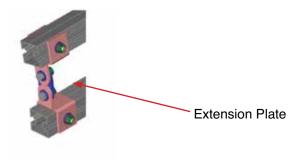
#### STEP 2 - SETTING THE ANGLE OF THE TRAVERSE WALKWAY

For setting angles between  $5^{\circ}$  -  $35^{\circ}$  the following arrangements are to be used to meet various roof angles. Assembled modules will already have these in place.

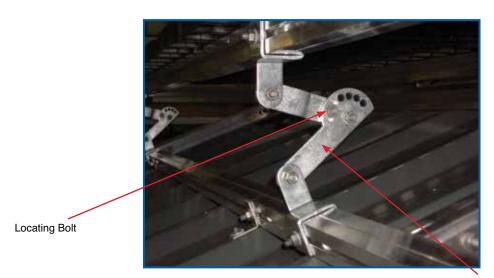
• For roof pitches between 2.5° - 7.5° the traverse support plates (WW4694010) are to be used with no further attachments, bolt together by means of an M8 x 25mm bolt washer and nut torqued to 15 Nm once installed



• For roof pitches the between 7.5° - 15° the traverse support plates are to be used in conjunction with the extension plate (WW3060050), bolted together by means of 2 x M8 x 25mm bolt washers and nuts torqued to 15 Nm once installed



• For Roof pitches between 15° - 35° the traverse support plates are to be used in conjunction with the rotating arms and bolted together by means of 4 x M8 x 25mm bolt washers and nuts. For pre-assembled modules these come with the Central Screw already fitted. For adjustment loosen the bolts enough to get some movement in the rotating arm. Place level on top of walkway. Move walkway up or down to meet required angle and replace the 25mm long locating bolts found in the fixing packs through the aligned holes in the two rotating arms. The walkway should be no more than 3° from horizontal. Make sure all bolts are torqued up to 15 Nm once install complete



Rotating Arms (WW3013010 / WW3013110)

# STEP 1: POSITIONING THE STEPS WALKWAY - COMPOSITE AND TRAPEZOIDAL METAL PROFILED ROOFS.

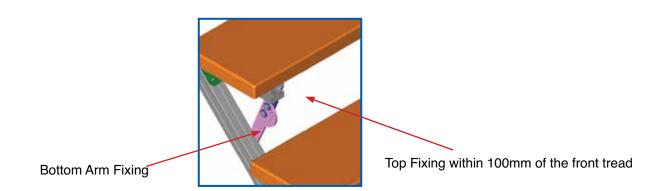
Install the pre-assembled steps walkway. Position the walkway on roof in designated area. Remove treads that are inline with the fixing points. Apply weathering strip to underside of retaining brackets and attach to extrusion with the M8 screw, nut & washers already positioned in the extrusion. Position the retaining bracket on crown of roof profile. Using the hex. flange self drilling screw fasten assembly to roof. Replace the previously removed treads back in position.

You must note the following points during assembly:

- make sure all retaining brackets have weathering strips applied to underside
- M8 screws are torqued up to 15 Nm once the walkway is in position

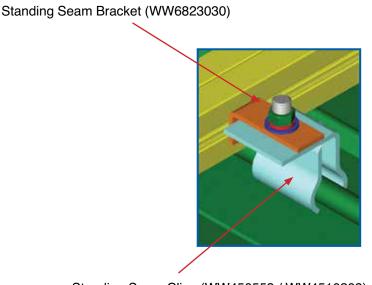
## STEP 2: SETTING THE ANGLE OF THE STEPS WALKWAY.

- the goings should be within 3° of the horizontal when set in position with the rotating arms
- going lengths will be pre-determined in house as lower pitch angles incorporate longer goings than high roof pitch angles
- for setting the angle, place the level onto the treads in the direction of the roof pitch. Using the rotating arms make sure the top fixing is within 100mm of the front tread. Fix the bottom rotating arm the same distance from hinge as top fixing. Move walkway up or down to meet required angle and replace the 25mm long locating bolts found in the fixing packs through the aligned holes in the two rotating arms. The walkway should be no more than 3° from horizontal. Make sure all bolts are torqued up to 15 Nm once install complete



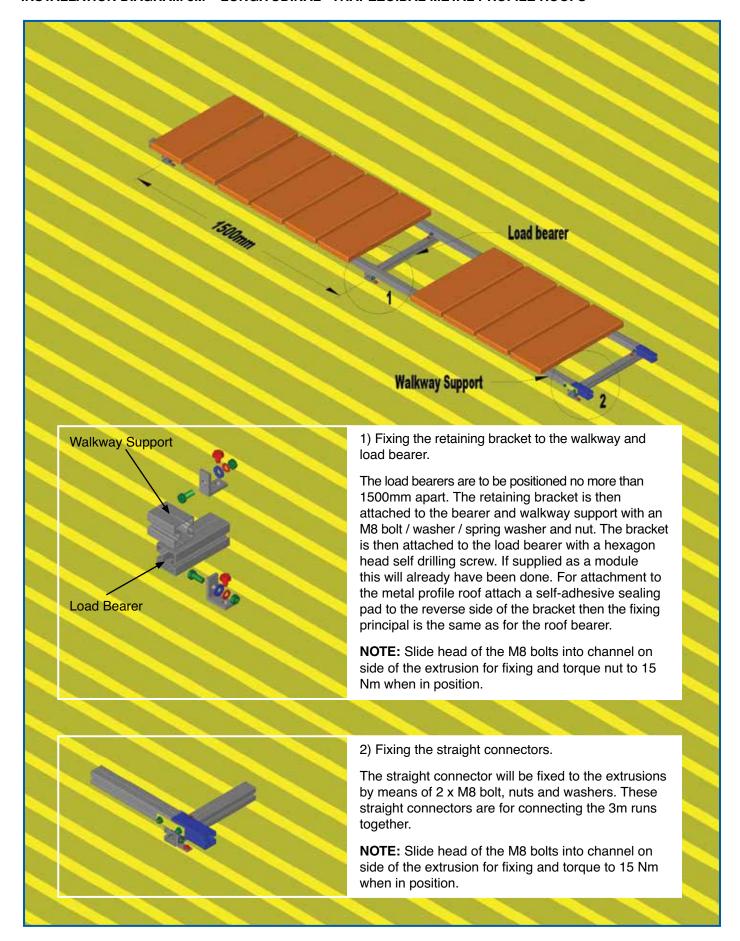
#### INSTALLATION FIXING DETAIL ON STANDING SEAM ROOFS.

• for fixing the Walkway System onto standing seam roofs a standing seam bracket is used. The standing seam clips are positioned over the standing seam profile and bolted loosely together. The standing seam bracket is then loosely bolted to the seam clips and the assembly is then positioned at the extrusion. All bolts are then to be torqued to 15 Nm

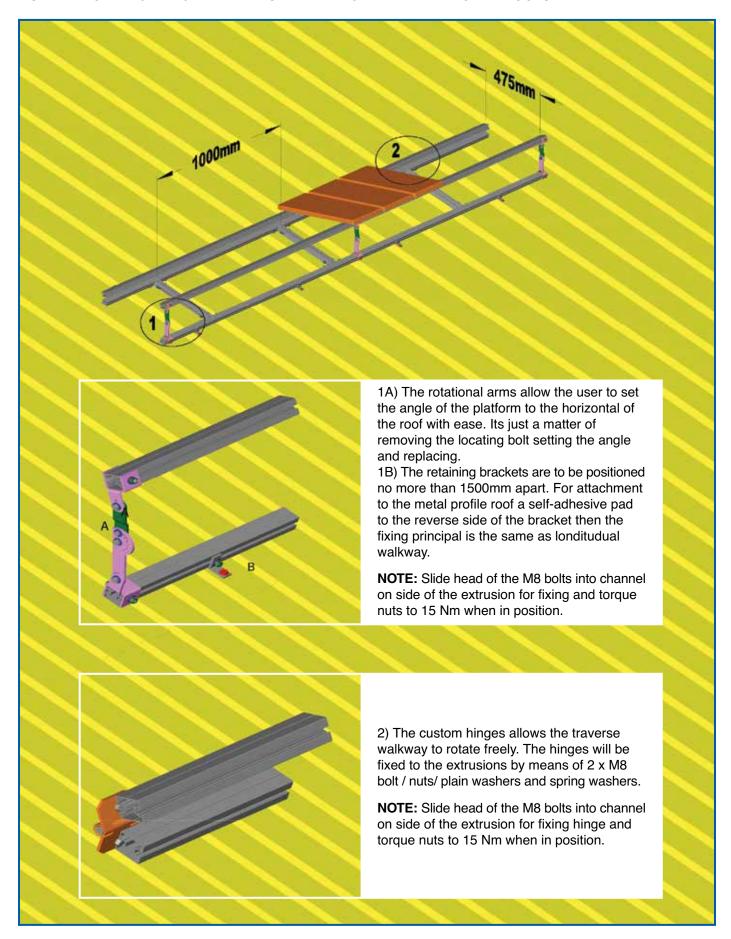


Standing Seam Clips (WW450553 / WW4510203)

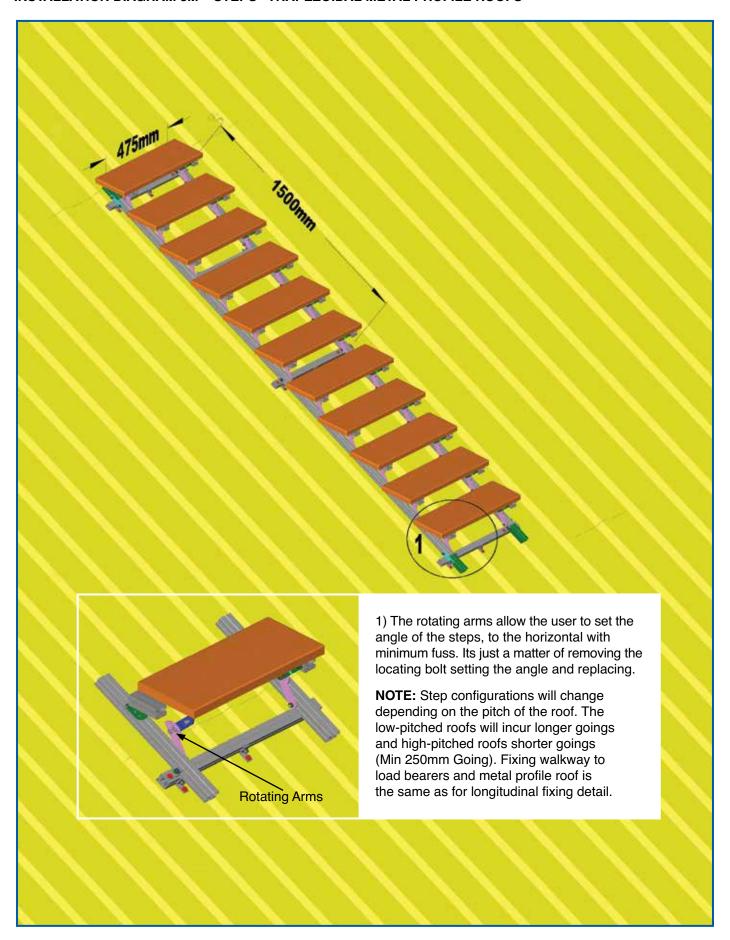
## INSTALLATION DIAGRAM 3M - LONGITUDINAL - TRAPEZOIDAL METAL PROFILE ROOFS



#### INSTALLATION DIAGRAM 3M - TRAVERSE - TRAPEZOIDAL METAL PROFILE ROOFS



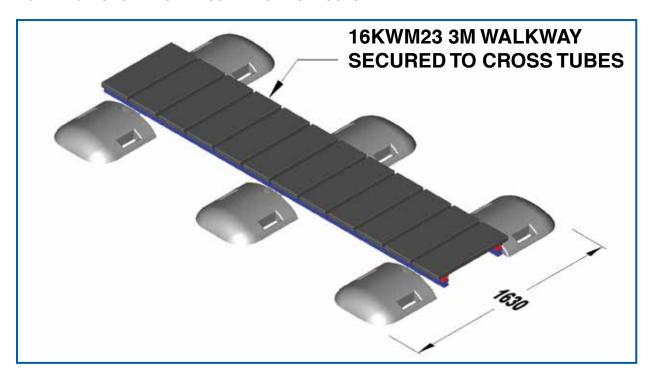
# INSTALLATION DIAGRAM 3M - STEPS - TRAPEZOIDAL METAL PROFILE ROOFS



# POSITIONING THE FREE STANDING WALKWAY - STEP 1 - FLAT (0 TO 5) MEMBRANE / ASPHALT / FELT ROOFS.

Install the pre-assembled walkway. Position the walkway on roof in designated area. Insert retaining collar into front recess of weight. Slide weight onto protruding tube. Tighten grub screw in collar to 39 Nm. Repeat for remaining tubes. In the case of asphalt roofs it will be necessary to use elastomer pads underneath the weights to prevent the weights damaging the surface of the roof.





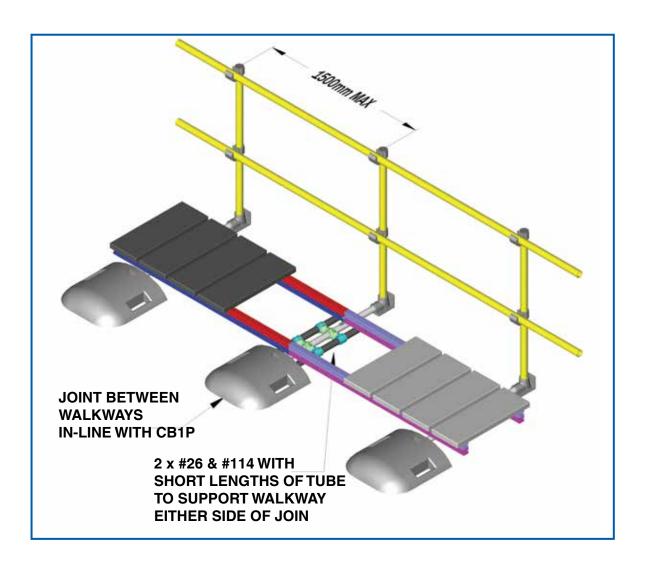
# **STEP 2: SUBSEQUENT WALKWAYS**

Join subsequent sections onto previously installed section in the same manner and use the straight connector between sections. When 90 degree corners are required it will be necessary to straddle sections between the weights. It is not necessary to join sections at corners.

# POSITIONING THE WALKWAY IN CONJUNCTION WITH ROOF EDGE PROTECTION – FLAT (0° TO 3°) MEMBRANE / ASPHALT / FELT ROOFS.

## STEP 1: SUPPORT FRAMEWORK

Install the Roof Edge Protection system as per the relevant instructions for the product. Ensure that the Roof Edge Protection uprights and counter-balances are positioned as shown in the picture below. Place walkway modules on top of counter-balance tubes and secure them using the supplied brackets and hexagon head self drilling screws.



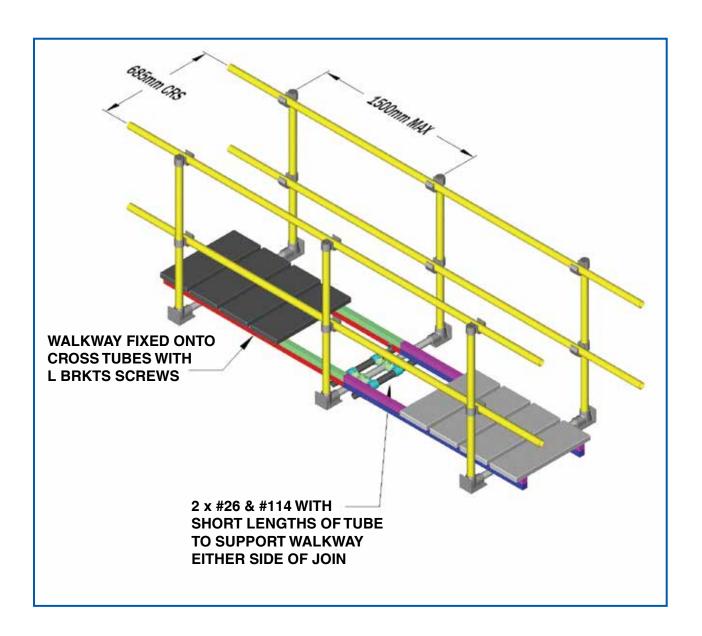
#### STEP 2: SUBSEQUENT WALKWAYS

Join subsequent sections onto previously installed section in the same manner and use the straight connector between sections. When 90 degree corners are required it will be necessary to straddle sections between the weights. It is not necessary to join sections at corners.

POSITIONING THE WALKWAY IN CONJUNCTION WITH ROOF EDGE PROTECTION UPRIGHTS – FLAT (0° TO 3°) MEMBRANE / ASPHALT / FELT ROOFS.

## STEP 1: SUPPORT FRAMEWORK

Install the Roof Edge Protection system as per the relevant instructions for the product. Ensure that the Roof Edge Protection uprights are positioned as shown in the picture below. Place walkway modules on top of counter-balance tubes and secure them using the supplied brackets and hexagon head self drilling screws.



## **STEP 2: SUBSEQUENT WALKWAYS**

Join subsequent sections onto previously installed section in the same manner and use the straight connector between sections. It is not necessary to join sections at 90 degree corners.

# 0.6 FINAL INSPECTION BEFORE USE

Make a final inspection of the assembled Walkway System. Ensure that all the instructions for their installation and location have been followed. Special attention should be paid to the following:

- 1) all fasteners and bolts are correctly tightened
- 2) all gaps between treads, are within the guidelines set in the standard, this being 30mm max
- 3) the Walkway System is no less than 1m from the edge of the roof
- 4) the bridging extrusions are fully in contact with the roof surface, to prevent movement
- 5) the correct number of fixings are positioned in appropriate places when fixing down the Walkway System
- 6) that the roof surface is of an appropriate type and angle and that the surface conditions are satisfactory (e.g. no ice, snow, frost, standing water, contamination)

#### **NOTE**

 Any unfamiliar roof surfaces and profiles un-related to composite, trapezoidal metal profile or standing seam, please contact your local branch

#### **DISCLAIMER**

Whilst every effort has been made to ensure the accuracy of the information supplied. F H Brundle cannot be held responsible for any errors or omissions. This product must only be employed for its original intended use. Any other use is wrong and potentially dangerous. Installation must be carried out in full compliance with current regulations. F H Brundle cannot be held liable for any damages resulting from wrongful, erroneous or negligent use.

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