Connect A Tube

Assembly Instructions

Tubes, Joints & Accessories

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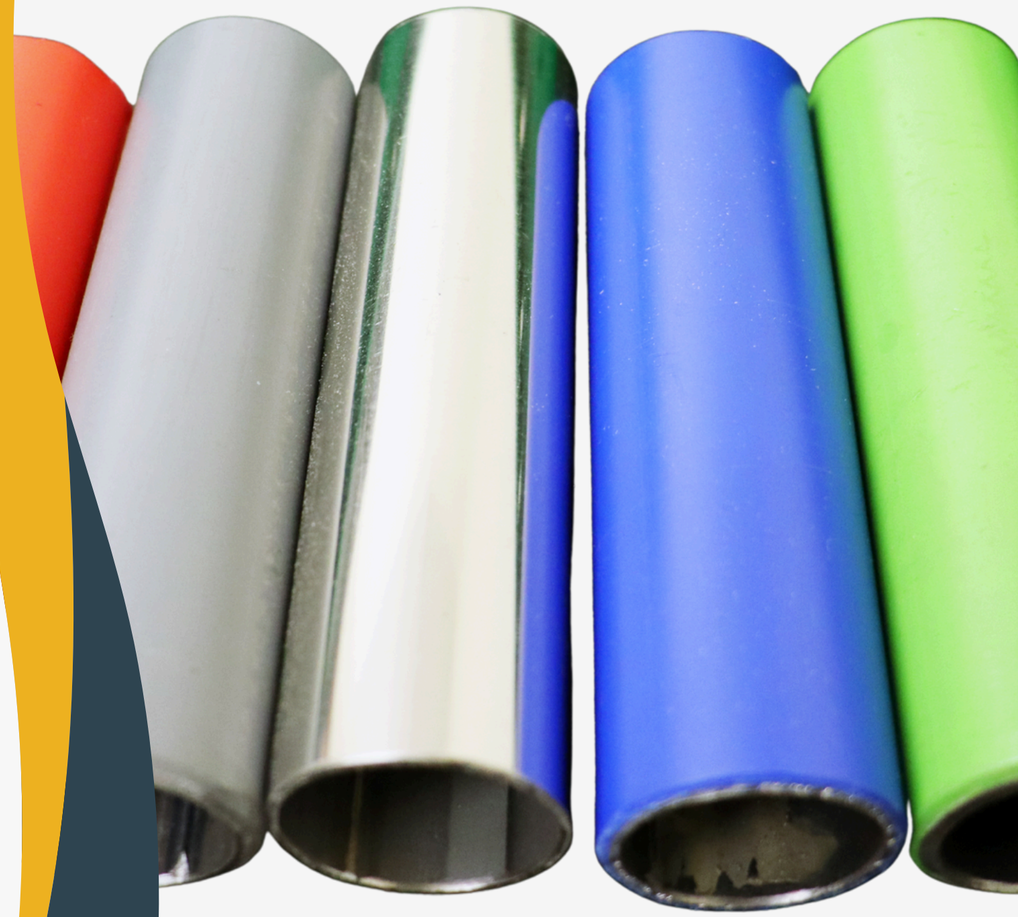
Tube

Tube Construction and Material Options

Our standard tubes have a 28mm outer diameter and are made from a strong steel core with a bonded ABS plastic coating. This coating is available in a range of colour finishes and includes an internal anti-corrosion treatment, improving both durability and the clamping force at joints.

For applications where hygiene, appearance or static control is important, stainless steel tubes are available. These are suitable for cleanroom environments and are naturally ESD safe. Aluminium profiles are also held in stock as an alternative option.

Tubes come in standard 4-metre lengths but can be cut to size before delivery. Wall thickness ranges from 0.7mm to 1.1mm for general use, with a 2mm option available for heavy-duty applications.



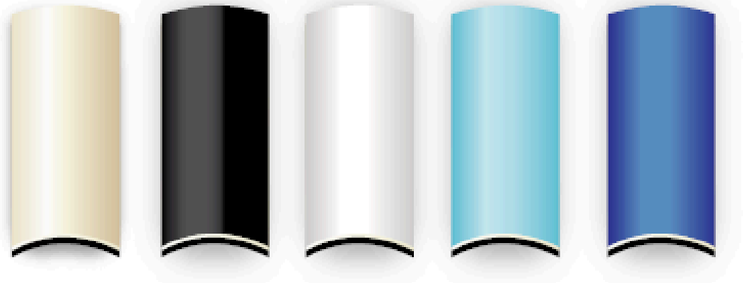
Tube Type

ABS-Coated Steel Tube
Manufactured with a steel core and bonded ABS outer layer using a specialised adhesive.

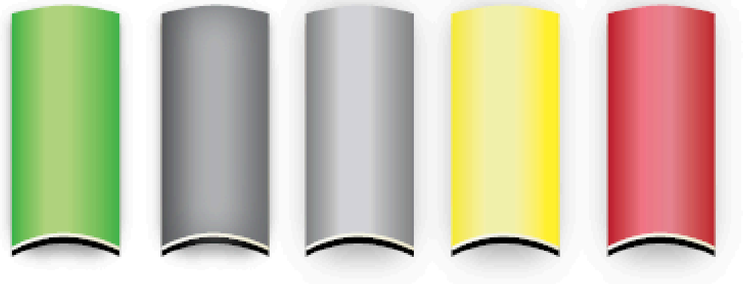
- Smooth, high-quality finish
- Available in a range of standard colours (special colours on request)
- Internal anti-rust coating for extended lifespan
- ESD-compatible version available
- Resistant to oils and chemicals
- Environmentally friendly and cost-effective
- Outer diameter: 28mm
- Wall thickness options: 0.7mm, 1.0mm, 2.0mm

Stainless Steel Tube
Made from type 201 stainless steel and designed for more demanding or hygienic environments.

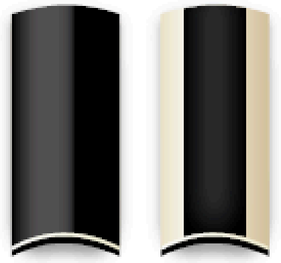
- Clean, polished appearance
- Naturally ESD-safe
- Suitable for cleanroom or high-visibility applications
- Outer diameter: 28mm
- Wall thickness: 1.2mm



Ivory | Black | White | Light Blue | Dark Blue



Green | Dark Grey | Light Grey | Yellow | Red



ESD Black | Line ESD

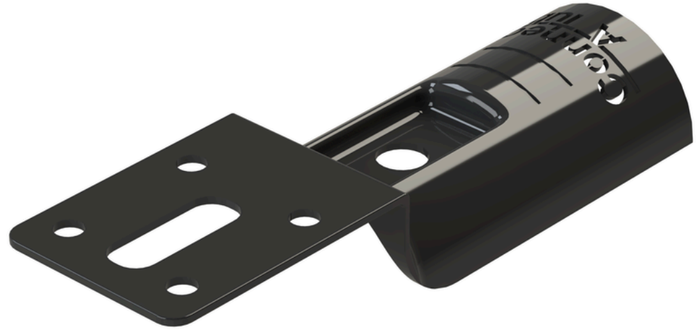
Metal Joints

Connect-A-Tube offers the flexibility to build a wide range of equipment layouts. Metal joints securely connect the tubes, allowing for square, straight, hinged or parallel configurations.

The system can also be integrated with aluminium profiles for more complex assemblies.

- Available in black or nickel-coated finishes
- Supported by a full range of compatible plastic accessories
- Simple assembly using a hex head M6 bolt and T-nut
- T-nut design prevents joint rotation and ensures a tight, secure fit

This modular approach allows fast, adaptable construction with minimal tools.



Connect-A-Tube Joint Features

Grip

Two internal rib patterns provide a secure grip on the tube.
Ensure tubes are inserted at least 30mm, using the witness marks as a guide.

Joint Strength

Each joint holds up to 80kg in shear before slipping, based on a bolt torque of approximately 10Nm.

Design

Connect-A-Tube joints are made from 2.5mm high-quality steel. Bolt holes are punched after forming to maintain shape and strength.

Corrosion Protection

All joints are treated with a protective coating to reduce corrosion and extend service life, even in challenging environments.

Finish Options

Joints are available in a black or nickel-plated finish, offering both aesthetic choice and surface protection.

Roller Track

Roller Track System
The roller track system is ideal for flow racks, FIFO setups and gravity-fed conveyors. It allows low-friction, reliable movement of boxes, bins and components.

Construction & Finish
Each track is built with a galvanised steel frame and durable plastic rollers. This provides a strong, corrosion-resistant base with smooth, consistent rolling performance.

Accessories & Integration
End stops, side guides and mounting brackets are available to customise the system. Roller track can also be integrated with Connect-A-Tube structures for full modular builds.

Assembly & Mounting
Measure and cut the roller track and guide profile to length. Slide the track into the guide, then fit the end brackets to secure the system.

Roller Track

Assembly & Lengths

Roller track is quick to assemble using dedicated end fittings that fix directly to the tube structure. Standard lengths are 4 metres, with pre-cut options available on request.

Braking System

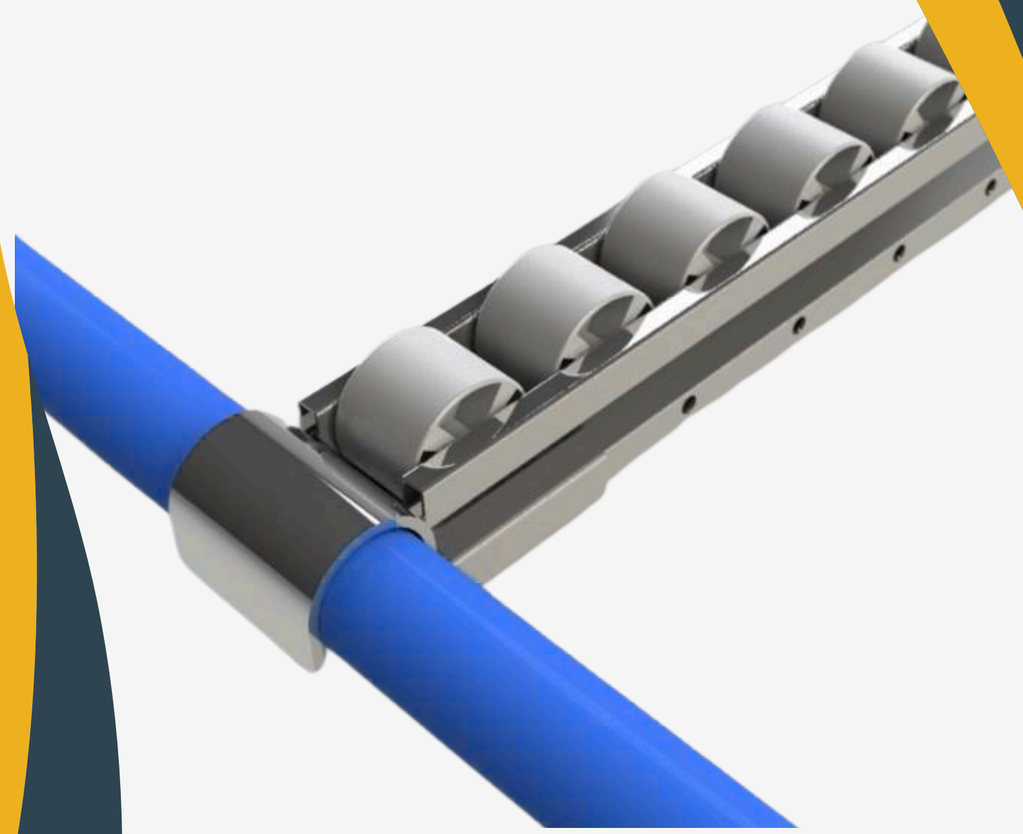
A braking unit can be added at the end of the track to slow down boxes or containers. This fits directly over the roller track to reduce momentum at the end of the line.

Support Requirements

For lengths over 1500mm, it’s recommended to add a centre support to maintain alignment and prevent distortion under load.

Guiding & Control

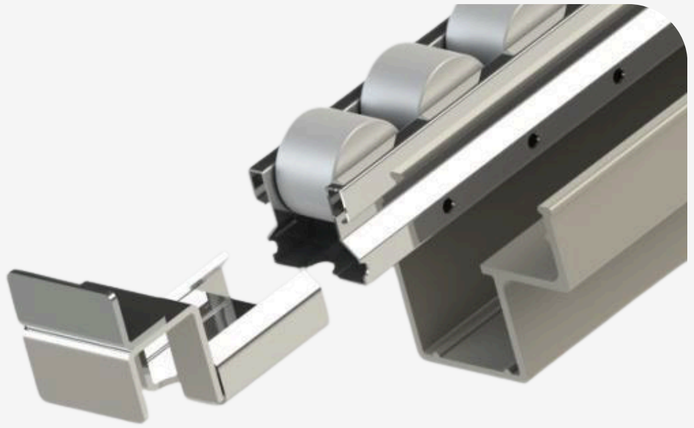
Plastic guide profiles can be added alongside the roller track to keep items aligned during transit. These help prevent tipping or misalignment on curves or slopes.

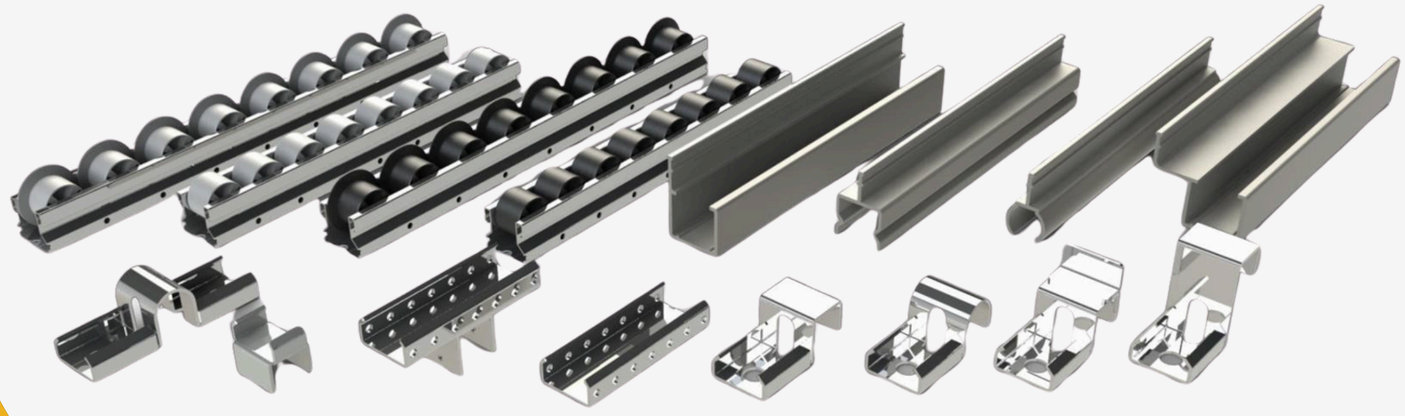


Roller Track Mounting

Maximum load per meter

40mm wheel Dia 30 : 100 kg
73mm wheel Dia 34 : 215 kg
73mm wheel Dia 18 : 225 Kg





Minimum recommended angle

40mm: 5 degrees
73mm: 7 degrees
Depending on the product surface

Tube Length & Joint Connection

Tube Length Calculation

When designing a structure using the Connect-A-Tube system, it's important to accurately calculate tube lengths to ensure a proper fit between joints. The basic guideline is simple: subtract 100mm from the overall structure width to get your required tube length.
For example, if the total width of your table is 800mm, the tube length should be 700mm.

Grip Design

Each joint includes a two-ribbed internal pattern designed to maximise grip. This pattern helps hold the tube securely in place and improves overall structural strength.

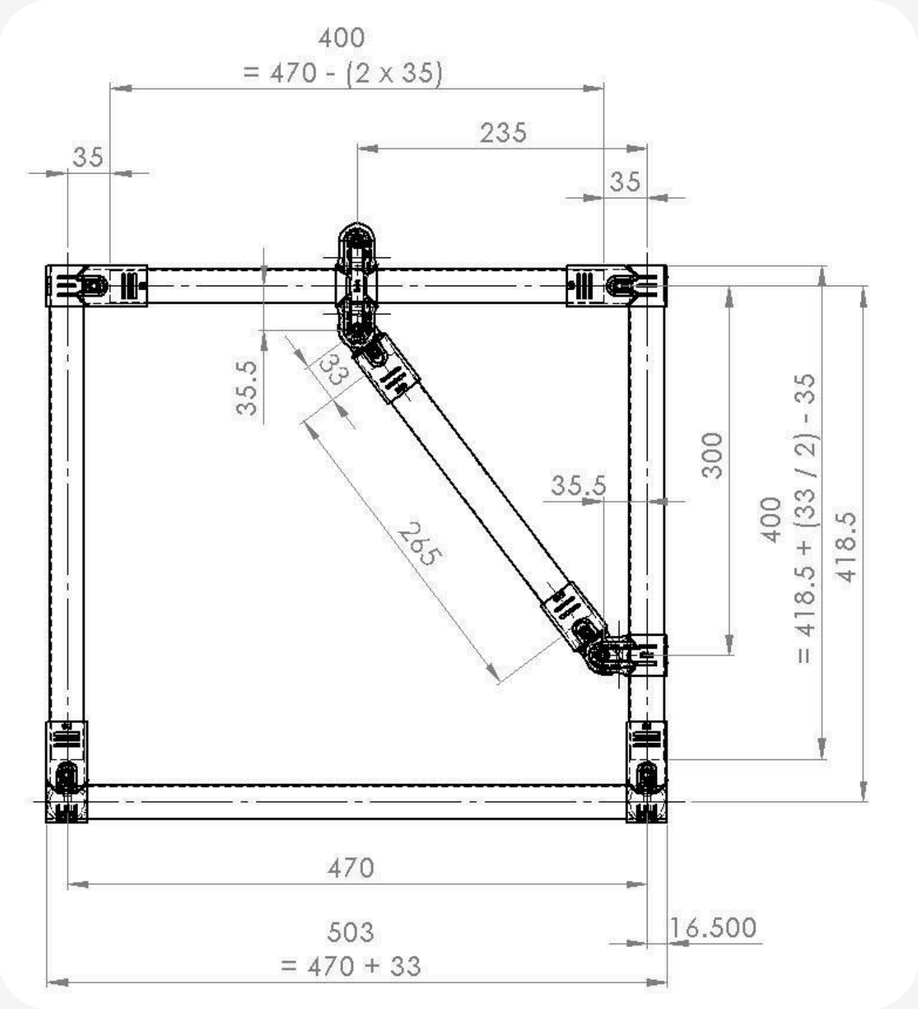
Dimensions

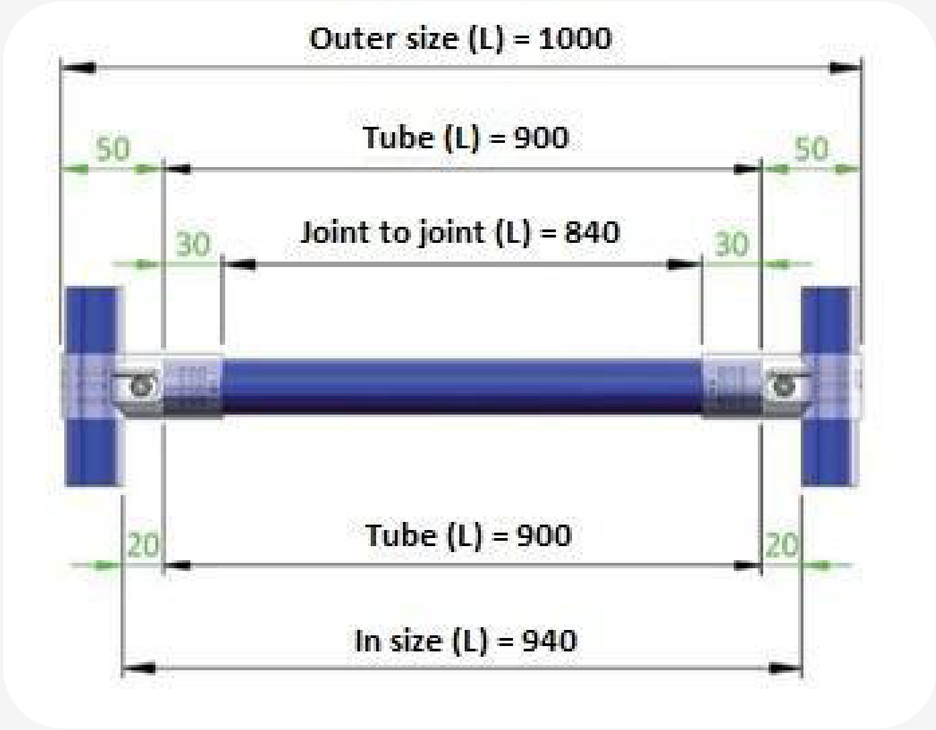
Standard tubes have a nominal outer diameter of 28mm. The joints are designed to match, with an internal diameter of 28mm and an external diameter of 33mm. This tight fit ensures a strong and stable connection when assembled correctly.

Assembly Tip

Always make sure the tube is inserted fully into the joint, to a depth of at least 30mm. Use the witness marks near the grip area of the joint as a visual check during assembly.

Calculate the Tube Length





Joint Use Guidelines

Corner Connections

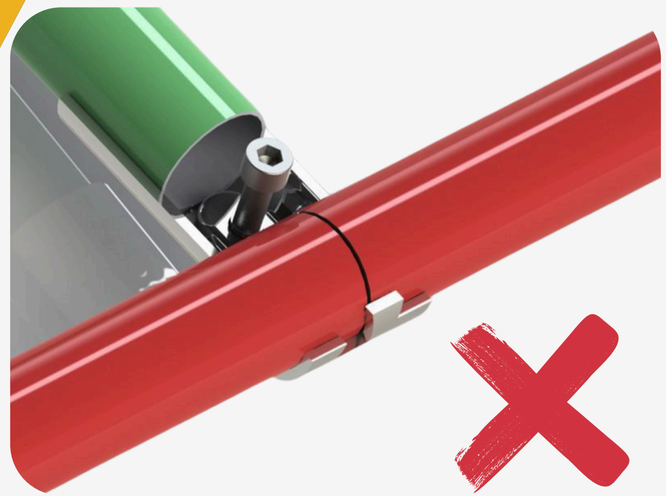
To prevent distortion, use angled connectors (E-2 and E-3) at inner and outer corners wherever possible.
Avoid using straight connectors like E-1 in base frames, as this can lead to deformation under load.
As a general guideline, include at least three fixed angles at the base of any structure to maintain stability and shape.

Torque Requirements

Tighten all bolts to 10–12 Nm using a 5mm Allen key. Use the long side for leverage and ensure all joints are firmly secured. If unsure, check with a torque wrench.

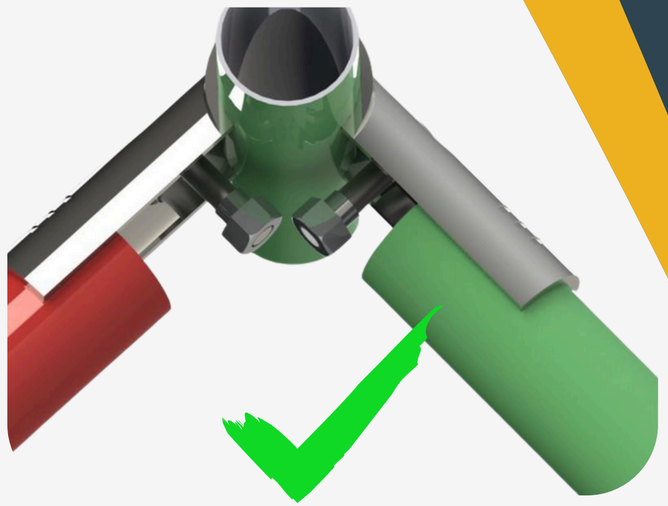
Loose bolts can affect the strength and alignment of the structure, so it's good practice to recheck tightness after initial assembly and during regular maintenance.!

Joint Use Guidelines



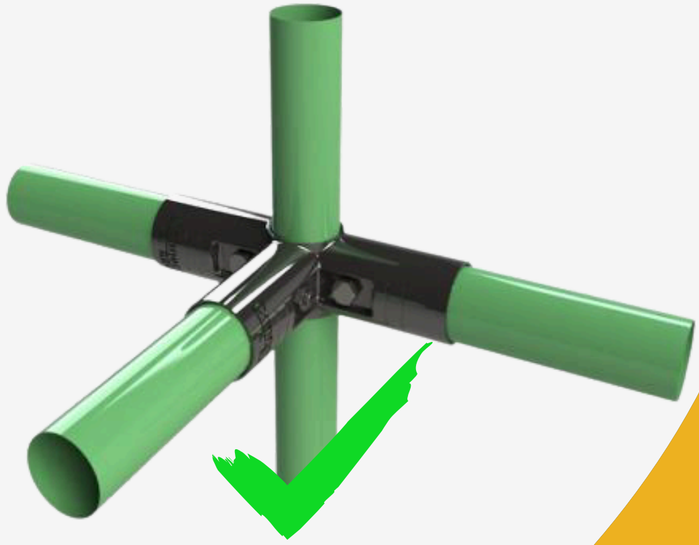
Grip points

Each set of grip points in a joint is designed for a single tube only. Joints should never be used to connect or extend two tubes in line.



Gripping

Always select the correct joint type for the structure you're building to ensure proper function and long-term stability.



Maximum unsupported free span

Span

Horizontal tubes and roller tracks longer than 1500mm should be supported to avoid deflection. This is a general guideline, as requirements may vary depending on the structure.

Support

Support can be added using vertical tubes, diagonal braces or double tube arrangements. These methods can be used individually or combined for added stability.

Double Tube Support

Use a double tube structure to minimise deflection. Apply this in at least three areas and reinforce with brace tubes and 45-degree or flexible angle connectors.

Wheel selection and assembly

When to Use Plate Wheels

- For loads over 200kg
- On uneven or rough floor surfaces
- When wheels need to stay within the frame

Positioning Guidelines

- Place wheels at least 500mm apart
- This prevents tipping and improves overall stability

Fixings & Support

- Use M8 nuts and bolts with washers
- Special fittings are required for proper wheel attachment
- A tube can be added between plates to prevent base distortion

Wheel selection and assembly

Inserted wheels

Inserted wheels are mounted by fitting a threaded steel bush into the tube. The insert includes an M10 or M12 thread, allowing secure wheel attachment with a matching bolt and spring washer.

For heavy-duty use, it’s recommended to apply Loctite or a similar industrial adhesive to prevent loosening under load.

The correct insert depends on the tube type, outer diameter and the wheel’s hole size. Tubes should be properly de-burred to ensure a clean, accurate fit.

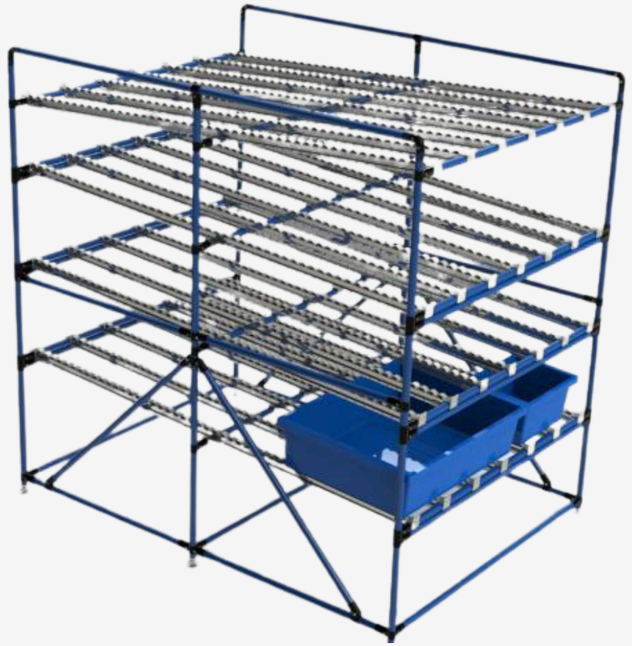
Feet type and assembly

Rubber feet

Joints for attachment

Steel feet & inserts

Diagonal Bracing for Stability



Using Diagonals

Diagonals help improve structural stability and should be placed between horizontal and vertical tubes. They are especially important in mobile structures and frames using roller track.

Types of Diagonals

A variety of joints can be used to add diagonals, including angle connectors, flexible angle connectors and standard joints. Flexible connectors allow you to set almost any angle to suit your design.

The building of a flow rack








The building of a flow rack

Modular units used for line side picking

Mobile unit to allow for cleaning and relocation

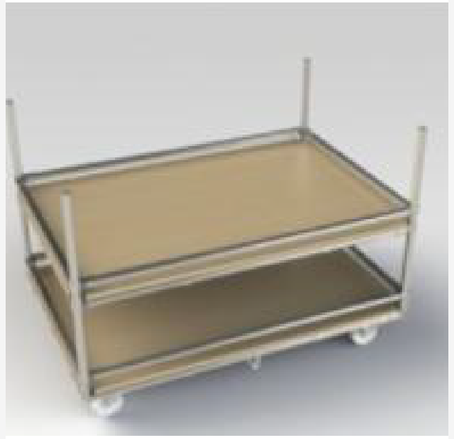
The building of a Transport Trolley








The building of a Transport Trolley



Exploded view of a transport trolley

The building of a Workstation








The building of a Workstation

Exploded view of a Workstation

Safe working checklist

Safety & Compliance

All equipment must meet national safety regulations regarding strength, stability and safe use. Structures must be well-designed, made from durable materials and built to avoid collapse or tipping.

Workplace Considerations

Work areas must be kept free from hazards. No item should pose a risk to staff through collapse, movement or imbalance. All equipment must remain stable under normal working conditions.

Responsibility & Use

While Connect-A-Tube offers high flexibility, this can lead to unsafe setups if not assembled correctly. This guide outlines general safety principles, but the end user is responsible for ensuring equipment is safe and fit for purpose. Refer to PUWER (Provision and Use of Work Equipment Regulations) for further guidance.

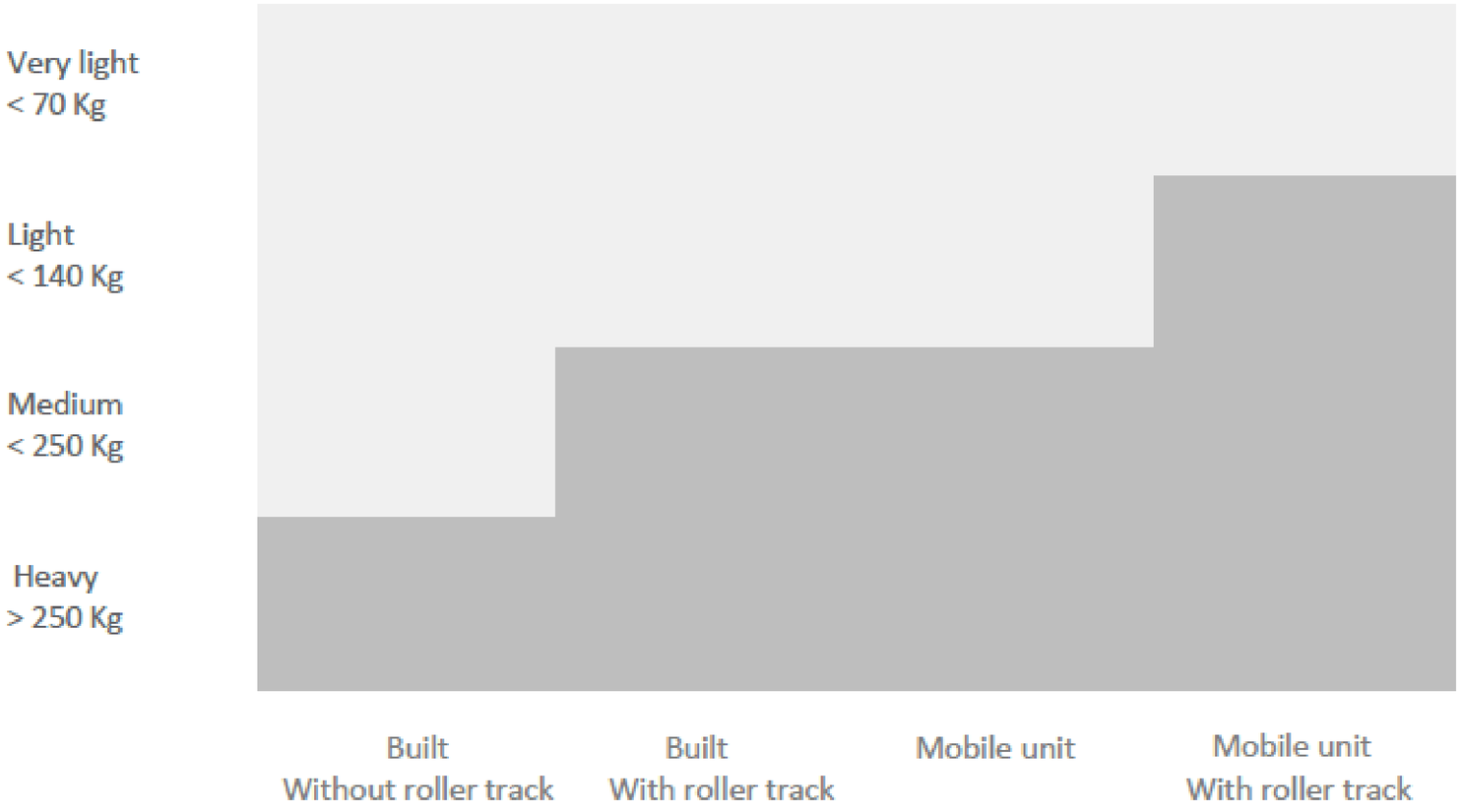
Training & Support

Texam distinguishes between basic and advanced design training. Most users will develop experience over time, but advice should always be sought for load-bearing builds over 200kg. Follow the official assembly guidelines and do not modify recommended practices.

If in doubt, contact us on +44 28 9267 4137 for technical support or design advice.

Safe working checklist

Check in which category the structure falls into



Structures in gray areas need advice from Texam Limited

Safe working checklist

Dynamic Load Factor

In moving setups, such as those with wheels or roller track, the expected maximum load must be multiplied by 1.5 to account for added stress during use.

Example & Design Guidance

For a mobile structure with a 100kg load: 100kg × 1.5 = 150kg (dynamic load)

This falls into the medium range (<250kg). In such cases, proper design advice should always be sought before construction.

Design Advice

Always factor in dynamic loading during the planning stage. Underestimating this can result in instability or failure. For loads above 200kg or where movement is frequent, consult with a trained designer to verify the setup is safe and compliant.

Regular Checks

Dynamic structures are subject to more wear and vibration. Schedule regular inspections to check for loose joints, worn components or signs of stress. Tighten bolts and replace any damaged parts to maintain long-term safety.

Need Advice or Support?

If you have any questions about Connect-A-Tube design, assembly or safety, we're here to help

Contact Texam Ltd

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Let’s Talk About Your Next Project