

# PRODUCTS BY APPLICATION

**Marshall-Tufflex cable management solutions are suitable to many different environments including: education, office, transport, industry, data, laboratory and healthcare.**

PRODUCTS BY APPLICATION



# CABLE MANAGEMENT FOR EDUCATIONAL ENVIRONMENTS

Marshall-Tufflex has been supplying trunking systems to the UK's educational facilities for over thirty years. We are dedicated to ensuring that our comprehensive range of products meets the needs of clients, designers and contractors working in the education sector.

We understand that there is increasing demand for cable management products that enable the distribution of power and high speed data services. As the largest UK manufacturer of cable management products, we apply our vast experience and technical knowledge to not only meet these requirements but to provide future proof cable management solutions.



## What we offer

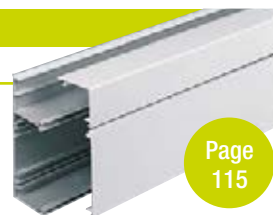
- Cable management products that are already proven and have been selected for use in the classrooms, workshops and offices in the education sector.
- A comprehensive range of trunking systems available in PVC-U, aluminium and steel, combining the latest technology in plug & play power connection to reduce installation time on site.
- Designs, dimensions and cable capacities to meet the latest standards and to accommodate building designs and construction parameters.
- Products to comply with Part M of the UK Building Regulations (Disability Discrimination Act for Visual Impairment).
- Antimicrobial trunking systems with an integral formulation preventing 99.9% of harmful bacterial growth.
- Stylish and practical trunking systems that complement modern classroom environments.
- Ever growing range of Level 2 BIM models and data.

## PVC-U trunking

### Compact 1 and 2

**130 x 50mm**

A compact two compartment dado and skirting system suited to fit within areas that have trunking height restrictions, for example to negotiate radiators or window sills.



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### Mono Plus 20 and 30

**140 x 50mm / 155 x 55mm**

An economical and stylish three compartment dado trunking for use where space is limited. Mono Plus has one piece fittings with a single lid for improved security.



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### Sterling Profile 1, 2 and 3

**167 x 50mm**

A popular stylish medium sized trunking system for dado and skirting application with three segregated compartments. Sterling Profile 1 has been tried and tested within the educational environment over many years.



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### Sterling Curve

**167 x 50mm**

Sterling Curve is a stylish medium sized trunking system for dado and skirting application with three segregated compartments.

Sterling Curve Profile 1 has curved outer compartments designed to stop clutter, avoid dust traps and make cleaning easy.



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### Odyssey

**180 x 57mm**

Curved profile dado trunking with one main compartment and two smaller compartments designed specifically for heavy traffic areas such as classrooms. Odyssey's curved profile is designed to prohibit clutter, avoid dust traps and makes cleaning easy. Compartments can be subdivided and screened if required.



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### Twin Plus

**210 x 57mm**

An attractive high capacity segregated two compartment containment system which is ideal for schools colleges and universities requiring large quantities of Cat 7 data cabling throughout classrooms and computer suites.



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### Twin165

**160 x 65mm**

A mid-size, two-compartment system, Twin165 offers high capacity for Cat 6, Cat 6a and Cat 7 data cabling for specification in educational environments.



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### Bench trunking

**105 x 105mm**

An easy to install robust, angled trunking that can be mounted directly on workbenches or angled under shelving. Compartment can be subdivided and screened if required.



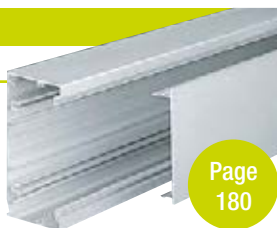
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## Aluminium trunking systems

### Elegance 110

**110 x 55mm**

An impact resistant compact rectangular dado trunking system with a single lid cover. Elegance 110 is an excellent choice for educational areas requiring a stylish yet robust trunking system, particularly effective where a high quality of screening performance and security is required.



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### Elegance 170

**170 x 55mm**

An attractive, light to handle, rectangular dado trunking system with a single lid cover. Elegance 170 is particularly suited to workshop or laboratory installations where extra mechanical strength is necessary. Can be single, twin or three compartment with easy to fit dividing fillets with pre-punched knockouts.



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### Twin Plus

**210 x 57mm**

A strong and attractive high capacity segregated two compartment containment system. Ideal for schools, colleges and universities requiring large quantities of Cat 7 data cabling throughout classrooms and computer suites.



Page  
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### Bench trunking

**105 x 105mm**

An easy to install, robust, angled trunking that can be mounted directly on laboratory and medical workbenches or angled under shelving. Compartment can be subdivided if required.



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## Case Study 1

### Elegance 170 goes to the top of the class



**Elegance 170 aluminium profile has scored top marks after proving perfect for a brand new school in Belfast.**

Elegance 170 Aluminium (170x55mm) is hard-wearing, good-looking and lightweight, making it perfect for educational and office projects where a robust yet stylish cable management solution with extra mechanical strength and a higher cable capacity is required.

The profile ticked all the boxes for the new Bunscoil Bheann Mhadagain School in Belfast. Supplied by Core Electrical (NI), working with consultants JCP Consulting and electrical contractors Norlect Engineering, the Elegance 170 system was also praised for being Cat 7 and Part M compliant.

“The contractor and consultant needed a system that could be installed quickly while still delivering the highest standards of quality. The Elegance 170 range was perfect,” said Gerry McKeith, Core Electrical (NI). “We believe this is the first school project in Northern Ireland to use Elegance 170 but it certainly won’t be the last. Since supplying Marshall-Tufflex for Bunscoil Bheann Mhadagain we have been successful in obtaining orders and supplying Elegance 110 and 170 to a number of schools and we’re quoting for more schools and commercial projects.”

## Case Study 2

### ‘Twin’ trunking duo resolves size issue at Sunderland College



**Twin165 trunking has come up trumps for yet another major educational new-build project, offering generous compartment sizes in a trunking profile able to accommodate height restrictions around window sills.**

Specifiers working on the new £22 million Arts and Sports Academies at Sunderland College’s Bede Campus required an integrated cable management solution for both buildings.

The college had previously used Twin Plus trunking and was happy with its performance and generous, two full-sized compartment, cabling capacity. But when specifying trunking to carry power and data supplies throughout the new buildings, mechanical and electrical services consultant Desco was limited by height restrictions around window sills. Twin165 solved the dilemma, offering an alternative solution for these tricky areas with a flexible, medium-sized, cable containment solution that met the specification and required cable capacity perfectly.

Both Twin Plus and Twin165 were specified for the new buildings. Karen Wade, director of facilities at Sunderland College, said: “We have used Marshall-Tufflex trunking not only in the new Sports and Arts Academies’ projects, but also in other smaller refurbishment projects across the estate. We find Marshall-Tufflex trunking both flexible and durable which makes it suitable for use in a busy college environment.”

The products were installed by Castle Building Services, which carried out the mechanical and electrical engineering services. Although familiar with installing Marshall-Tufflex products, Castle Building Services had not worked with Twin165 before but reported that it had been very straightforward to install.

# CABLE MANAGEMENT FOR OFFICE ENVIRONMENTS

Marshall-Tufflex has a wide range of cable management products in a variety of materials which are designed to transport power and data throughout office environments. We are dedicated to ensuring that our comprehensive range of products meets the needs of clients, designers and contractors working in the commercial sector.



## What we offer

- A comprehensive range of underfloor to desk cable management and prefabricated wiring systems developed for fast, easy and adaptable installation.
- MT32 prefabricated technology that provides seamless connection all the way from the incoming feed to the desktop.
- PowerPoles and PowerPosts are a practical, elegant and efficient solution for the management of power, data and communication services to island work stations.
- Practical trunking solutions in PVC-U, steel and aluminium including features such as Part M compliance, copper screening and data control bends.

## Underfloor to desk solutions

### Powertrack

Powertrack is a comprehensive range of underfloor 63Amp powertrack that comes complete with pre-assembled coupler, end cap and floor mounting brackets.



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### Raised floor boxes

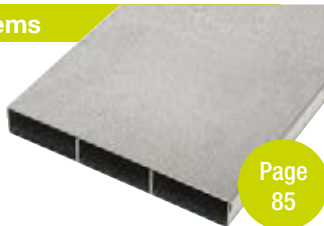
A high quality range of raised floor boxes to provide power and data to desks within the modern office environment. Available as standard or heavy duty versions. Pre-wired versions are available for speed and ease of installation.



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### In-screed flooring systems

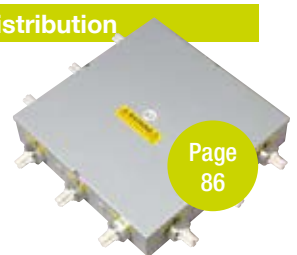
A range of floor outlet boxes, fittings and plates in galvanised steel, with choice of PVC-U or steel ducting.



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### MT32 Pre-wired underfloor distribution

A prefabricated wiring system that incorporates 32Amp plug and play connector technology. The system provides a range of pre-wired, pre-tested products which can be used alone or in conjunction with powertrack, desk modules and other pre-wired systems to accommodate various underfloor layout options.



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### Desk surface units

A range of surface mounted power and data modules for use with office furniture. See page 78 for a typical office installation using our underfloor to desk solutions.



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### PowerPoles and PowerPosts

PowerPoles are a practical and elegant solution for the management of power, data and communication services to island work stations. PowerPoles are suitable for suspended and solid ceiling applications whilst PowerPosts are suitable for all floor applications. Single and double sided options are available.



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## PVC-U trunking

### Sterling Profile 1, 2 and 3

167 x 50mm

A popular stylish medium sized trunking system for dado and skirting application with three segregated compartments. Sterling Profile 1 has been tried and tested within the office environment over many years. Outer compartments can be subdivided and screened if required.



Page 122

### Twin Plus

210 x 57mm

An attractive high capacity segregated two compartment containment system which is ideal for carrying power and data services. Compartments can be subdivided and screened if required.



Page 151

### Sterling Curve

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Sterling Curve is a stylish medium sized trunking system for dado and skirting application with three segregated compartments. Sterling Curve Profile 1 has curved outer compartments designed to stop clutter, avoid dust traps and make cleaning easy. Compartments can be subdivided and screened if required.

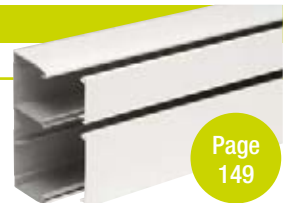


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### Odyssey

180 x 57mm

Curved profile dado trunking with one main compartment and two smaller compartments designed specifically for heavy traffic areas. Odyssey's completely curved profile is designed to prohibit clutter, avoid dust traps and makes cleaning easy. Compartments can be subdivided and screened if required.



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## Aluminium trunking systems

### Sterling Profile 3001 - 3003

**167 x 50mm**

A popular and stylish trunking system that offers a variety of trunking profiles with three separate compartments and individual covers for each compartment for ease of access.



Page  
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### Twin Plus

**210 x 57mm**

A strong and attractive high capacity segregated two compartment containment system which is ideal for offices requiring large quantities of Cat 7 data cabling.



Page  
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### Elegance 170

**170 x 55mm**

An attractive, light to handle, rectangular dado trunking system with a single lid cover. Elegance 170 has mechanical strength and impact-resistance that is superior to steel. Can be single, twin or three compartment with easy to fit dividing fillets with pre-punched knockouts.



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## Steel trunking systems

### System 130

**130 x 63mm**

Steel System 130 is a stylish compact pre-galvanised trunking system with extra depth and a resilient white powder-coat finish that helps to prevent smearing and marking.



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### System 170

**170 x 63mm**

Steel System 170 is a mid-sized pre-galvanised trunking system with extra depth and a resilient white powder-coat finish that helps to prevent smearing and marking.



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## Case Study 1

### Nice and easy with Twin165 Trunking



Twin165 data compliant trunking system had no trouble impressing both Ormiston Victory Academy and the Dodd Group's project team of its specification merits for the academy's purpose-built building in Norwich.

"It ticked all the boxes and that of our client," said Alan Hensby of Dodd Group Eastern, electrical and mechanical contractor for the project. "As a trust, Ormiston Victory Academy took an active role in selecting products for the new school building, which included looking at samples."

"Marshall-Tufflex came out best when we looked at different cable management options & it provided value for money compared with the competition," added Mr Hensby. "We particularly liked the simplicity of its design and ease of installation when up against time. Some systems we considered were fragmented and not tamper-proof. Being a tamper-proof, all-in-one unit with double compartments, Twin165 gave us the depth of capacity we required without being over-bearing in width, easily fitting spaces around windows & radiators. It also gave us flexibility for future-proofing without disturbing the fabric of the building. We like nice and easy trunking!"

Some 284 lengths of Twin165 in white with grey lids to meet DDA requirements were installed within the new academy building by Electrical Engineering Services, King's Lynn.

## Case Study 2

### Marshall-Tufflex trunking keeps Pace with prestigious project



The impressive refurbishment of the Pace Building within Durham University's Palace Green Library demonstrates how well-specified cable management can enhance the final look of a project. The 1960s part-listed Pace Building unites wood, exposed steelwork, concrete and glass to provide users with a beautifully executed modern, hi-tech environment in which to do research and to study.

Each of the many desks within the library have power delivered by Marshall-Tufflex's charcoal-coloured Sterling Profile 1 dado trunking where a perimeter cable management solution was required.

Project mechanical and electrical building design consultant Desco, turned to Marshall-Tufflex to provide cable containment that combined looks and performance and was in-line with the architectural aesthetic of the building. Sterling Profile delivered the required style, colour and finish for the project together with functionality: as well as looking good the 167x50mm trunking has three segregated compartments that can be further subdivided as required, making it an attractive and flexible solution.

The second key requirement of the project was an underfloor power delivery solution suited to the open plan environment of the building. For this Marshall-Tufflex's in-screed floor distribution system was specified.



# CABLE MANAGEMENT FOR TRANSPORT AND INDUSTRIAL ENVIRONMENTS

Marshall-Tufflex has a wide range of cable management products in a variety of materials which are designed to suit specific on site or installation needs, where particular hazards or harsh environments require a specialised solution. We are dedicated to ensuring that our comprehensive range of products meets the needs of clients, designers and contractors working in the transport and industrial sector.



**Marshall-Tufflex is registered with the RISQS  
Railway Industry Supplier Qualification scheme.**

## What is RISQS?

RISQS, formerly known as Achilles Link-up, has been developed to provide a service for the qualification of suppliers for all products and services that are procured by the industry. RISQS supports Network Rail, LUL/Transport for London, train operators and other rail products and services providers in the management of supply chain risk. RISQS is an independent, third party qualification assessment of a supplier's capability to supply products and services.

## GRP cable management systems

Glass Reinforced Polyester (GRP) cable management systems are well suited to aggressive environments, such as extreme weather or high temperatures.

The systems are extremely robust, considerably lighter than traditional metal systems, and have excellent resistance against fire and corrosion resulting in a very long life span. GRP systems have a large cable capacity, and offer fast and flexible installation solutions, with the ability of on-site assembly and configuration. Marshall-Tufflex can offer a wide range of GRP systems including trays, ladders, ground ducts, troughing, accessories and fittings, fixings and supports.

- Large cable capacity
- No need for painting means low maintenance costs
- Self extinguishing, without toxic fumes
- Zero Halogen
- Resistant to temperatures from -80° to +130°
- Excellent cable protection



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### GRP vs. Steel

GRP is 40% lighter

Completely corrosion resistant. No rusting even when in contact with salt spray, H25, acid built up from exhaust gases, or brake dust along roads and railways

Fast installation with fewer fasteners

Easy to cut and drill

Slow rate of heat transfer

Earthing not required

Antimagnetic and therefore resistant to electromagnetic pulses

Lower life cycle cost

## MT Supertube LSOH Conduit: A time saving alternative to steel conduit



MT Supertube is a three-layer, heavy gauge, impact-resistant conduit giving excellent EMI properties. Available with steel or polycarbonate fittings, MT Supertube is manufactured to comply with BS EN 50086.

- LSOH Polyethylene-coated aluminium
- Can be formed by hand and no bending spring is required
- No special tools necessary
- MT Supertube FR Plus version is fire tested in accordance with, and meets criteria for, Category 'EQ/I' of the London Underground Limited Engineering Standard 2-01001-002: Issue A1:December 2003

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### Contractor cost and labour saving example (based on contractor purchase price)

Costs calculated on using 100m of 20mm conduit with 8 off 90° bends and estimated manpower costs of £30 per hour.

Galvanised steel conduit		MT Supertube coiled conduit	
Material Cost	£2.20 per metre + fittings = £230	Material Cost	£2.62 per metre + fittings = £288.71
Labour @ 30 mins / metre	2 metres / hour	Labour @ 10 mins / metre	6 metres / hour
50 hours @ £30	£1,500	16.67 hours @ £30	£500
<b>Galvanised steel overall costs</b>	<b>£1,730</b>	<b>MT Supertube overall costs</b>	<b>£788.71</b>

**The savings on this job amounts to £941.29 – 54% cheaper than galvanised steel.**

These figures are based on Marshall-Tufflex trade list price 1st February 2017 (for MT Supertube) and quoted wholesaler prices (for galvanised steel conduit).

## Steel trunking systems

Steel has a mechanical strength that makes it a robust and durable option for public areas where there is a high footfall. Our steel trunking provides specifiers, contractors and end-users with reliable, practical systems with hard-wearing, clean lines and all the advantages of inherent LSOH and screening properties.

The extra depth provided by Marshall-Tufflex steel perimeter trunking systems offer increased capacity for power and data services. All earth bondings are 'friction fit' to eliminate the need for unsightly screw fixings.

- Easy to install steel trunking system
- Well known, proven and stylish design
- Increased space internally
- Lighter weight to make installation easier
- Simpler to cut

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## Aluminium trunking systems

Aluminium perimeter trunking systems provide the specifier, contractor and end-user with elegant, stream-lined containment that offers the practical advantages of inherent LSOH and screening properties making it ideal for industrial environments.

Aluminium is light to handle with a mechanical strength and impact-resistance that is superior to steel. Extruded sections provide attractive profiles and products are finished with a high quality, powder-coat that provides a blemish-resistant surface.

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## Case Study 1

### Marshall-Tufflex keeps London Underground in the picture



Marshall-Tufflex's MT Supertube FR, formulated for applications where fire safety regulations are at their most stringent, was a key component in the upgrade of London Underground's Victoria Line OPO CCTV camera system, with more than five miles (8,100m) of the high-performance conduit installed.

Manufactured from a special three-layer LSOH conduit, MT Supertube FR delivered a superior design solution to protect cables that transmit images of the platforms to the train driver. MT Supertube FR is an alternative to steel trunking, offering much faster fit times. It is supplied in coils of up to 100m and therefore produces little wastage from cut lengths.

For the London Underground project MT Supertube FR's EMC shielding capabilities were of paramount importance, as the specifying contractor explained: "We chose MT Supertube for its ability to provide EMC shielding. It has proved a better way to segregate cables, which is greatly beneficial in London Underground applications where there are a lot of unknown cables to contend with."

MT Supertube FR meets London Underground's fire and materials specification, having undergone a series of tests conducted against the rigorous requirements set out by London Underground Ltd.

A Marshall-Tufflex spokesman said: "Having product specified for use in the London Underground system is of immense importance to us and a big rubber stamp for MT Supertube FR. The Underground is a demanding environment that calls for products of the highest calibre and performance."



## Case Study 2

### GRP cable management proves perfect solution for Jersey's historic rail tunnels



High humidity levels and potential fire risks posed a cable management specification challenge during work at Jersey's famous St Aubin's war-time tunnels.

Corroded casing needed replacing within the tunnels because it was considered a fire risk and required frequent repair due to high humidity levels. GRP cable management proved the perfect solution thanks to its corrosion resistance and excellent fire safety credentials.

For this project GRP tray was suspended from ceilings to carry a wide range of cables, including PVC/SWA sub main, lighting SY sub-circuit, fire alarm and low voltage signal cables. Light fittings have also been fixed to the trunking's underside.

Specifier, Dave Atkinson from States of Jersey, explained why GRP was ideal for this challenging environment: "The humidity level in the tunnels at certain times of the year is very high due to water permeating through the hillside and concrete structure. Because of this moisture, the existing electrical installation had corroded.

"We chose GRP tray for the upgrade as it's resistant to humidity and fire. Apart from putting an end to the corrosion issues, St Aubin's needed a solution that would improve safety for tunnel users while also allowing maintenance teams to reduce testing regimes – something that was taking up a lot of time. Thanks its fire resistant credentials, the use of GRP has meant that periodic testing is now sufficient, in-line with BS 5839," concluded Mr Atkinson.

## Case Study 3

### Marshall-Tufflex systems ensure no delays at Dublin Airport passenger terminal



Behind the scenes at Terminal 2, the flagship project of the redevelopment of Dublin Airport, are thousands of metres of Marshall-Tufflex trunking products, selected for their ease and speed of installation, good looks and short lead times.

Substantial amounts of three-layer LSOH MT Supertube conduit are installed at high level and within ceilings in the main Terminal building, satisfying the project consultant's requirement for mechanical protection/segregation and a good architectural aesthetic.

Client Dublin Airport Authority had originally specified steel conduit but the project's engineering contractor, Mercury Engineering, gained agreement for a specification change to MT Supertube. A spokesman said: "It was a really tight construction programme which I knew would benefit from the time-saving features of certain Marshall-Tufflex products. MT Supertube offered two specific advantages over steel conduit. Not only is it much quicker to install, delivering significant labour saving benefits, it is also much lighter. This meant that when installed at height it was a one man, rather than a two man, lift."

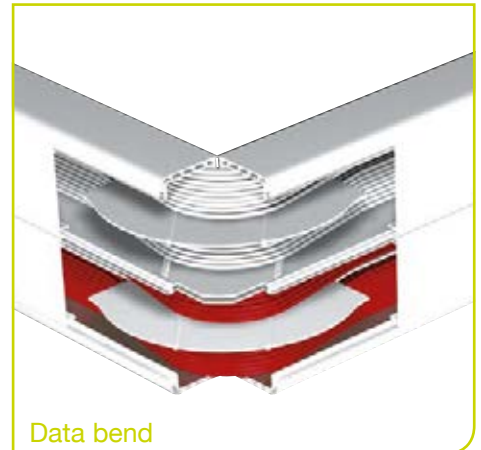
Thousands of metres of Marshall-Tufflex's unique, all-curved profile trunking Odyssey were also installed in some 150 offices within Terminal 2. The good-looking Cat 6 compliant profile was also installed in passenger booking kiosks, immigration booths, car rental offices and other front-of-house desk areas.

All Marshall-Tufflex products were supplied by its sole Irish distributor, Core Electrical Ltd.

# CABLE MANAGEMENT FOR DATA INSTALLATIONS

Marshall-Tufflex cable management solutions are designed to accommodate the increasing performance levels of current and future data networks. It is important that cable containment systems measure up to the demand and offer the flexibility for reconfiguration whilst having a large data capacity to allow for future data requirements.

Decisions on the right system for any application are based on many factors. Marshall-Tufflex has a wide selection of data compliant perimeter trunking systems, so whatever your application, we are confident we have a solution for you.


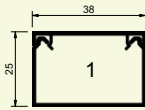

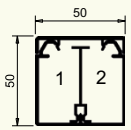
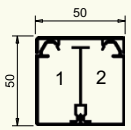
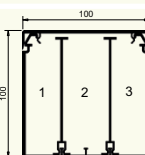

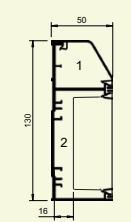
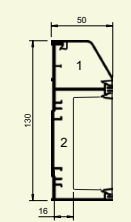
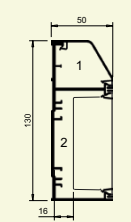

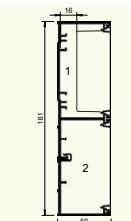
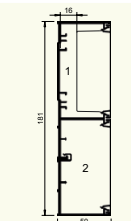

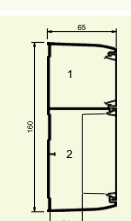
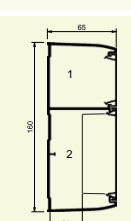

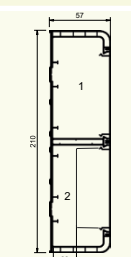
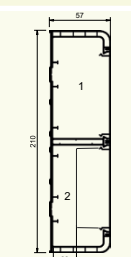


## What we offer

- Bend radius controls.
- Steel screening divider to BS EN 50174-2: 2009+A2:2014.
- 50mm power/data separation to BS EN 50174-2: 2009+A2:2014.
- Full compartment copper spray screening (to assist in meeting EMC Directive) with NO reduction of compartment capacity.
- Adjustable depth data boxes and frames.
- Accessories to accommodate LJ6 (6C) and Euromod data modules.
- Trunking systems (Sterling and Sterling XL) that can be extended to accommodate any number of data cables.

## 1 compartment trunking

## 2 compartment trunking

System		Dimensions	Cable Capacity based on typical values for Ø6.5mm, Ø7.0mm and Ø8.4mm data cables*						
MINI PVC-U		 MMT4: 38 x 25mm	MMT4	Ø6.5mm Ø7.0mm Ø8.4mm	Comp 1				
		10 8 6							
MAXI PVC-U		 MTRS50: 50 x 50mm	MTRS50	Ø6.5mm Ø7.0mm Ø8.4mm	Total (No dividers)	With dividers			
		COMP 1				COMP 2	COMP 3		
		 MTRS75: 75 x 75mm	MTRS75	Ø6.5mm Ø7.0mm Ø8.4mm	28 23 16	13 11 7	13 11 7	— — —	
		 MTRS100: 100 x 100mm	MTRS100	Ø6.5mm Ø7.0mm Ø8.4mm	66 55 38	31 26 18	31 26 18	— — —	
COMPACT 1 & 2 PVC-U		 Compact 1: 130 x 50mm  Compact 2: 130 x 50mm (Compact 1)	Compact 1	Ø6.5mm Ø7.0mm Ø8.4mm	Comp 1	Comp 2			
		NO BOX				WITH BOX			
		 Compact 1: 130 x 50mm  Compact 2: 130 x 50mm (Compact 1)	Compact 2	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10	53 44 31	21 17 12		
		 Compact 1: 130 x 50mm  Compact 2: 130 x 50mm (Compact 1)	Compact 2	Ø6.5mm Ø7.0mm Ø8.4mm	21 18 12	53 44 31	21 17 12		
COMPACT 3 PVC-U		 Compact 3: 181 x 50mm	Compact 3	Ø6.5mm Ø7.0mm Ø8.4mm	Comp 1		Comp 2		
		NO BOX			WITH BOX	NO BOX	WITH BOX		
 Compact 3: 181 x 50mm	Compact 3	Ø6.5mm Ø7.0mm Ø8.4mm	53 44 31	21 18 12	52 43 30	20 17 12			
TWIN165 PVC-U		 160x65mm	Twin165	Ø6.5mm Ø7.0mm Ø8.4mm	Comp 1	Comp 2			
		NO BOX				WITH BOX	NO BOX		WITH BOX
 160x65mm	Twin165	Ø6.5mm Ø7.0mm Ø8.4mm	46 38 27	76 63 44	43 36 25				
TWIN PLUS PVC-U & ALUMINIUM		 210 x 57mm	Twin Plus	Ø6.5mm Ø7.0mm Ø8.4mm	Comp 1		Comp 2		
		NO BOX			WITH BOX	NO BOX	WITH BOX		
 210 x 57mm	Twin Plus	Ø6.5mm Ø7.0mm Ø8.4mm	66 56 39	34 28 20	66 56 39	34 28 20			


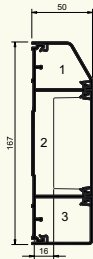

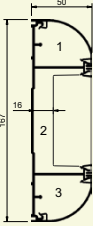
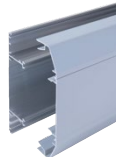

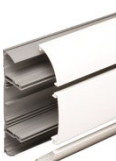
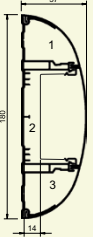

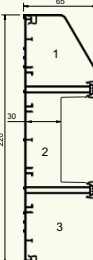
\*All calculations allow for a 45% space factor



	Bend radius control	Internal Bend	External Bend	Flat Tee	Flat Angle	Slow Bend	For PVC-U ranges only	
							Steel insert	Copper spray
	50mm COMPLIANT UP TO CAT 7A						X	X
		Moulded	Moulded	Moulded	Moulded	Special#		
	25mm & 50mm COMPLIANT UP TO CAT 7A						X	X  (Dividing fillet can be copper sprayed)
		Moulded	Moulded	Fabricated	Moulded	Special#		
		Fabricated	Fabricated	Fabricated	Moulded	Special#		
		Fabricated	Fabricated	Fabricated	Fabricated	Special#		
	50mm COMPLIANT UP TO CAT 7A						✓	Please contact the Technical Team on +44 (0)1424 856688 for options regarding special screening requirements
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	50mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Fabricated	Moulded	Special#		

# These products are made to special order and may be subject to minimum order quantities and longer lead times.

\* For made to order fittings to meet Cat 7a requirements please contact our Technical Team on +44 (0)1424 856688

System		Dimensions		Cable Capacity based on typical values for Ø6.5mm, Ø7.0mm and Ø8.4mm data cables*						
STERLING PROFILE 1, 2 & 3 PVC-U		 (Sterling Profile 2)	167 x 50mm			Comp 1	Comp 2		Comp 3	
							NO BOX	WITH BOX		
				Profile 1	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10				
							54 45 31	19 16 11	18 15 10	
Profile 2	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10			22 18 13					
			54 45 31	19 16 11	22 18 13					
Profile 3	Ø6.5mm Ø7.0mm Ø8.4mm	22 18 13				54 45 31	19 16 11	22 18 13		
			54 45 31	19 16 11	22 18 13					
STERLING CURVE PROFILE 1 & 2 PVC-U		 (Sterling Curve Profile 1)	167 x 50mm			Comp 1	Comp 2		Comp 3	
							NO BOX	WITH BOX		
				Profile 1	Ø6.5mm Ø7.0mm Ø8.4mm	16 14 10				
							54 45 31	19 16 11	16 14 10	
Profile 2	Ø6.5mm Ø7.0mm Ø8.4mm	16 14 10			54 45 31	19 16 11	22 18 13			
			54 45 31	19 16 11	22 18 13					
STERLING PROFILE 3001, 3002 & 3003 ALUMINIUM		 (Sterling Profile 3002)	167 x 50mm			Comp 1	Comp 2		Comp 3	
							NO BOX	WITH BOX		
				3001	Ø6.5mm Ø7.0mm Ø8.4mm	15 12 9				
							53 44 31	21 18 12	16 14 9	
3002	Ø6.5mm Ø7.0mm Ø8.4mm	15 12 9			53 44 31	21 18 12	20 16 11			
			53 44 31	21 18 12	20 16 11					
3003	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 11				53 44 31	21 18 12	20 16 11		
			53 44 31	21 18 12	20 16 11					
ODYSSEY PVC-U			190 x 57mm			Comp 1	Comp 2		Comp 3	
							NO BOX	WITH BOX		
				Odyssey	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10				
							56 47 33	17 14 10	18 15 10	
XL PVC-U & ALUMINIUM		 (XL202)	220x65mm			Comp 1	Comp 2			Comp 3
							NO BOX	WITH BOX		
				XL201	Ø6.5mm Ø7.0mm Ø8.4mm	39 33 23				
							67 56 39	35 29 20	39 33 23	
XL202	Ø6.5mm Ø7.0mm Ø8.4mm	39 33 23			67 56 39	35 29 20	49 41 29			
			67 56 39	35 29 20	49 41 29					
XL203	Ø6.5mm Ø7.0mm Ø8.4mm	49 41 29				67 56 39	35 29 20	49 41 29		
			67 56 39	35 29 20	49 41 29					

\*All calculations allow for a 45% space factor


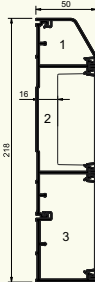
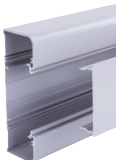
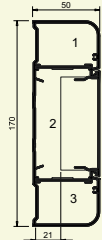
	Bend radius control	Internal Bend	External Bend	Flat Tee	Flat Angle	Slow Bend	For PVC-U ranges only	
							Steel insert	Copper spray
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Moulded	Moulded	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Moulded	Moulded	N/A†		
		Moulded	Moulded	Moulded	Moulded	N/A†		
	25mm & 50mm COMPLIANT UP TO CAT 7A						N/A	N/A
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	25mm, 50mm & 65mm COMPLIANT UP TO CAT 7A						✓	✓
		Moulded	Moulded	Moulded	Moulded	N/A†		
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	Please contact the Technical Team on +44 (0)1424 856688 for options regarding special screening requirements
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		

# These products are made to special order and may be subject to minimum order quantities and longer lead times.

† Slow bends are not required as built-in cable guides within fittings are standard.

\* For made to order fittings to meet Cat 7a requirements please contact our Technical Team on +44 (0)1424 856688



System	Dimensions	Cable Capacity based on typical values for Ø6.5mm, Ø7.0mm and Ø8.4mm data cables*										
<div>STERLING PROFILE 4-13 PVC-U</div> <div></div>	<div><p>Profile 4 &amp; 5: 218 x 50mm</p><p>Profile 6: 269 x 50mm</p><p>Profile 11, 12 &amp; 13: 255 x 50mm</p><p>(Sterling Profile 4)</p></div>			Comp 1		Comp 2		Comp 3		Comp 4		
				NO BOX	WITH BOX	NO BOX	WITH BOX	NO BOX	WITH BOX			
		Profile 4	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10	– – –	54 45 31	19 16 11	52 43 30	17 14 10	– – –		
		Profile 5	Ø6.5mm Ø7.0mm Ø8.4mm	22 18 13	– – –	54 45 31	19 16 11	52 43 30	17 14 10	– – –		
		Profile 6	Ø6.5mm Ø7.0mm Ø8.4mm	52 43 30	17 14 10	54 45 31	19 16 11	52 43 30	17 14 10	– – –		
		Profile 11	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10	– – –	54 45 31	19 16 11	50 42 29	15 13 9	18 15 10		
		Profile 12	Ø6.5mm Ø7.0mm Ø8.4mm	18 15 10	– – –	54 45 31	19 16 11	50 42 29	15 13 9	20 17 12		
		Profile 13	Ø6.5mm Ø7.0mm Ø8.4mm	20 17 12	– – –	54 45 31	19 16 11	50 42 29	15 13 9	20 17 12		
		<div>ELEGANCE 170 ALUMINIUM</div> <div></div>	<div><p>170 x 55mm</p></div>			Comp 1		Comp 2		Comp 3		
								NO BOX		NO BOX		
Elegance 170	Ø6.5mm Ø7.0mm Ø8.4mm			25 21 14		63 53 37		24 20 14		25 21 14		

\*All calculations allow for a 45% space factor

	Bend radius control	Internal Bend	External Bend	Flat Tee	Flat Angle	Slow Bend	For PVC-U ranges only	
							Steel insert	Copper spray
	25mm & 50mm COMPLIANT UP TO CAT 7A						✓	Please contact the Technical Team on +44 (0)1424 856688 for options regarding special screening requirements
		Moulded	Moulded	Fabricated	Moulded	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
		Moulded	Moulded	Fabricated	Fabricated	Special#		
	25mm & 50mm COMPLIANT UP TO CAT 7A						N/A	N/A
		Fabricated	Fabricated	Fabricated	Fabricated	Fabricated		

# These products are made to special order and may be subject to minimum order quantities and longer lead times.  
† Slow bends are not required as built-in cable guides within fittings are standard.  
\* For made to order fittings to meet Cat 7a requirements please contact our Technical Team on +44 (0)1424 856688

For Technical Information about usage of data trunking, please see page 246.

# TRUNKING FOR LABORATORY AND HEALTHCARE ENVIRONMENTS

Marshall-Tufflex has many years of experience in providing cable management solutions for medical and healthcare environments.

Trunking systems for this specialised type of application are available in both aluminium and PVC-U, to carry gas, power, data, telecoms and nurse call, providing first class screening performance and optional antimicrobial protection.



## What we offer

- PVC trunking that is easy to install and clean.
- Aluminium systems with multiple compartments providing LSOH containment for wiring, gas and air services.
- BIO trunking solutions to prevent the spread of infections and disease in environments such as hospitals, care homes, surgeries and health centres.

## Built-in protection

Where hygiene is a priority, we offer cable management systems with integral antimicrobial properties. By incorporating silver ions within the PVC-U based material the perimeter trunking will deliver ongoing antimicrobial protection that prevents 99.9% of harmful bacteria.

Because the Marshall-Tufflex Bio trunking solution is integral to the PVC-U material, there is no reduction in effectiveness of the trunking throughout its life – even if it is scratched or damaged.

Bio trunking uses a silver ion solution throughout the product, ensuring that 99.9% of harmful bacteria – like MRSA – will not survive on the surface.





## PVC-U trunking

### Compact

**130 x 50mm to 181 x 50mm**

A range of small and medium sized, two compartment, dado and skirting systems with varying compartment sizes suited to fit within areas that have trunking height restrictions, for example to negotiate radiators or window sills.

Outer compartments can be subdivided and screened if required.



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### Mono Plus 20

**140 x 50mm**

An economical and stylish 3 compartment dado trunking for use where space is limited. Mono Plus has one piece fittings with a single lid for improved security.



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### Sterling Profile 1

**167 x 50mm**

A popular stylish medium sized trunking system for dado application with three segregated compartments. Sterling Profile 1 has been tried and tested within the laboratory and healthcare environment over many years. Compartments can be subdivided and screened if required.



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### Sterling Curve

**167 x 50mm**

Sterling Curve is a stylish medium sized trunking system for dado and skirting application with three segregated compartments.

Sterling Curve Profile 1 has curved outer compartments designed to stop clutter, avoid dust traps and make cleaning easy.



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Sterling Curve Profile 1 is available as standard with Bio antimicrobial protection within the PVC-U material. See page 36.

### Odyssey

**180 x 57mm**

Curved profile dado trunking with one main compartment and two smaller compartments designed specifically for heavy traffic areas such as hospitals. Odyssey's completely curved profile is designed to prohibit clutter, avoid dust traps and makes cleaning easy. Compartments can be subdivided and screened if required.



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Odyssey is available as standard with Bio antimicrobial protection within the PVC-U material. See page 36.

### Twin Plus

**210 x 57mm**

An attractive high capacity segregated two compartment containment system which is ideal for carrying power and data services. Compartments can be subdivided and screened if required.



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### Bench trunking

**105 x 105mm**

An easy to install robust, angled trunking that can be mounted directly on laboratory and medical workbenches or angled under shelving. Compartment can be subdivided and screened if required.



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## Aluminium trunking systems

### Bench trunking

**105 x 105mm**

A robust, angled trunking that can be subdivided and is suitable for laboratory and medical workbenches or angled under shelving. A PVC-U dividing fillet is available with screening if required.



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### XL trunking

**220 x 65mm to 308 x 65mm**

A range of large three and four compartment dado and skirting trunking systems with separate compartments and individual covers. XL Trunking can accept gas and air outlets and can be extended to provide additional compartments. A PVC-U dividing fillet is available with screening if required.

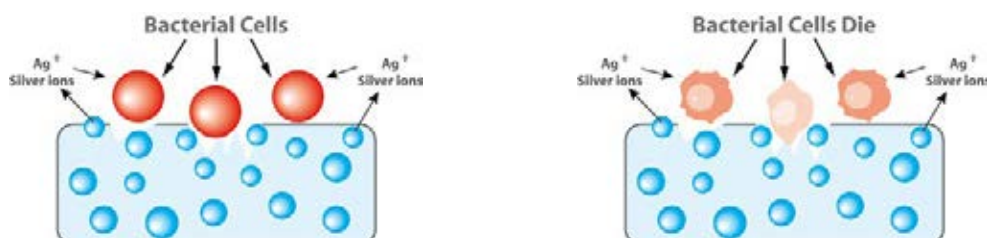


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## Bio trunking solutions offer:

- Prevention of harmful bacteria growth (for more details see test results on page 313)
- Antimicrobial properties inherently formulated within the PVC-U and ABS compounds
- A durable, non-leaching antimicrobial treatment
- Testing to ISO 22196:2011
- Proven silver ion-based technology to neutralise any bacteria with which it comes into contact
- Registration with the Environmental Protection Agency (EPA).
- Compliance with the European Biocidal Products Directive (BPD).
- Proven reductions in bacterial viable count by more than 99.9%.
- Antimicrobial treatments provide an extra level of protection when combined with normal cleaning procedures.

Bio trunking can be identified by using a UV light on the external surface of the trunking. The Bio system will reflect blue under UV light rather than violet.



## Bio trunking from Marshall-Tufflex

Odyssey and Sterling Curve Profile 1 trunking are available as standard with Bio antimicrobial protection within the PVC-U material. The following trunking ranges are available in Bio but are made to order and therefore will incur set up charges and an extended lead time.

Bench trunking • Compact • Mono Plus 20 • Sterling Profile • Twin Plus • XL

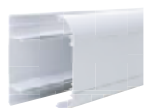
### Odyssey Bio trunking component chart



**Odyssey**  
180 x 57mm

Trunking assembly	End cap (1 piece)	Coupler (1 piece)	Internal bend (1 piece)	Internal adjustable bend	External bend (1 piece)	External adjustable bend	Flat angles (up or down)*	Flat tees (up or down)*	Accessory Box 1 gang Bio	Accessory Box 2 gang Bio	1 gang Bio mounting frame	2 gang Bio mounting frame
DD1B Pack 1 x 3m	DD1233WH Pack 2	DD1213WH Pack 1	DD1313WH Pack 1	DD1333WH Pack 1	DD1353WH Pack 1	DD1373WH Pack 1	DD1413WH Pack 1	DD1433WH Pack 1	DD1513WH Pack 20	DD1523WH Pack 10	DD1561WH Pack 20	DD1571WH Pack 10

### Sterling Curve Bio trunking component chart



**Sterling Curve Profile 1**  
167 x 50mm

Main compartment cover	Curve cover	Coupler	End cap	Internal bend	External bend	Flat angle complete*	Flat tee complete*	Accessory Box 1 gang Bio	Accessory Box 2 gang Bio
ETL1BIOWH Pack 8 x 3m	CETC1BIOWH Pack 8 x 3m	CECP1MBIOWH Pack 5	CEEC1PMBIOWH Pack 5	CEIBP1MBIOWH Pack 5	CXBP1MBIOWH Pack 5	CEFA1MBBIOWH Pack 1	CEFT1MBBIOWH Pack 1	ESSB1BIOWH Pack 20	ESSB2BIOWH Pack 10

\* Manufactured from ABS

## PVC Material Test Results

**LABORATORY** Anti-Microbial Test Division, Kyoto Biseibutsu Kenkyusyo, Yamashina-ku, Kyoto 607-8482, Japan  
**TEST ORGANISM** MRSA (Methicillin Resistant Staphylococcus aureus) Escherichia coli  
**STANDARD** ISO 22196 / JIS Z 2801:2000

### Quantitative Assessment of Activity - MRSA (Methicillin Resistant Staphylococcus aureus)

	Number of live organisms (Colony Forming Units)		% reduction of Colony Forming Units, expressed as comparison with control	
	0 hours	24 Hours		
Control - Untreated polyethylene film	110,000	96,000	–	–
PVC	110,000	<10	>99.98% Reduction	VERY GOOD

### Quantitative Assessment of Activity - Escherichia coli

	Number of live organisms (Colony Forming Units)		% reduction of Colony Forming Units, expressed as comparison with control	
	0 hours	24 Hours		
Control - Untreated polyethylene film	110,000	14,000,000	–	–
PVC	110,000	<10	>99.99992% Reduction	EXCELLENT

## ABS Material Test Results

**LABORATORY** Thomson Research Associates Inc., Ontario, Canada  
**TEST ORGANISM** Klebsiella pneumoniae, Staphylococcus aureus  
**STANDARD** ISO 22196:2011

### Quantitative Assessment of Activity - K. pneumoniae

Concentration of starting inoculum		1.92 x 10 <sup>5</sup>		
Sample Description	No. Bacteria Recovered	Log Value	R=[log(B/C)]	% Reduction
Inoculum Control	8.39 x 10 <sup>6</sup>	6.9	–	–
ABS	<2.00 x 10 <sup>1</sup>	<1.3	>5.6	>99.9%

### Quantitative Assessment of Activity - S. aureus

Concentration of starting inoculum		2.96 x 10 <sup>5</sup>		
Sample Description	No. Bacteria Recovered	Log Value	R=[log(B/C)]	% Reduction
Inoculum Control	1.00 x 10 <sup>6</sup>	6.0	–	–
ABS	1.04 x 10 <sup>2</sup>	2.0	4.0	>99.9%



### Bio trunking has demonstrated effectiveness against:

- Methicillin resistant Staphylococcus aureus (MRSA): an antibiotic resistant, opportunist pathogen that can survive on surfaces within the hospital environment.
- Klebsiella pneumoniae: an opportunist pathogen affecting people with a weakened immune system.
- Escherichia coli: All of us are colonised by E.coli in our gut but this bacterium can cause infections if it is transferred to a wound or a different part of the body causing severe food-associated illness.

## Case Study 1

### Selby project showcases benefits of Twin Plus trunking



Bio antimicrobial Twin Plus trunking proved the perfect choice for the £22 million Selby Community Project, a collaboration between the NHS and local authority to locate a community hospital, health clinic and council offices into a shared new build in the North Yorkshire town.

Large capacity Twin Plus is available in standard and antimicrobial versions, allowing consulting engineers DSSR to specify antimicrobial Bio Twin Plus for the hospital and standard Twin Plus for the council offices, creating a continuous aesthetic throughout the building. The hospital has 24 GP-led beds, a minor injuries unit, diagnostic facilities and minor surgery suite. It achieved a rating of 'excellent' against BREAA, the international environment assessment tool.

DSSR said: Bio Twin Plus offers the really valuable properties of an antimicrobial trunking system where it matters most, in the healthcare environment. Infection control is a huge issue and Bio Twin Plus supports cleaning regimes by working 24/7 in the fight against harmful bacteria."

Silver-ion protection is added to Bio's PVC-U formulation during manufacture, meaning that the bug-busting solution is incorporated within the Twin Plus. As a result it works 24 hours a day for the life of the trunking to kill bacteria such as MRSA, E-Coli and Salmonella, even if the trunking is scratched or knocked.

Bio Twin Plus has been tested to the quantitative standard ISO 22196:2007. Results show the survival rate of tested bacteria to be less than 0.1%. Marshall-Tufflex's Bio formulation is registered with the Environmental Protection Agency (EPA) and compliant with the European Biocidal Products Directive (BPD).

## Case Study 2

### White aluminium trunking does Sterling job for hospital



Specifiers working on ward upgrades at a leading South-West hospital required a cable management solution that met the cleanliness and durability requirements of the ward environment coupled with the capacity and flexibility to deliver bed-head services.

Facilities managers at Barnstaple's North Devon District Hospital, a high performing hospital, had also requested that the trunking system installed was metal, further narrowing specification choices. Sterling Aluminium 3002 in white delivered the ideal solution.

Andy Scourfield, of specifiers M&E Masters, Barnstaple, said: "We had to choose a trunking solution suitable for the medical environment. In other wards at the hospital PVC trunking has been used but for the most recent upgrades the hospital stipulated metal for its enhanced hygienic properties. The other big plus point of Sterling was price; it presented the most economically viable solution compared with other products of its type.

"We're big supporters of Marshall-Tufflex at M&E Masters. It's the first time we've used Sterling Aluminium 3002 but for the right application, it's definitely something we'd use again," added Mr Scourfield.

Sterling Trunking 3002 comprises three separate compartments, each with its own cover making it ideal for the multiple services on a hospital bed head such as lighting, communication and patient monitoring equipment.