



Marco Cable Management has further demonstrated its commitment to producing the highest quality products on the market by investing in a high-tech suite of specialist test equipment.

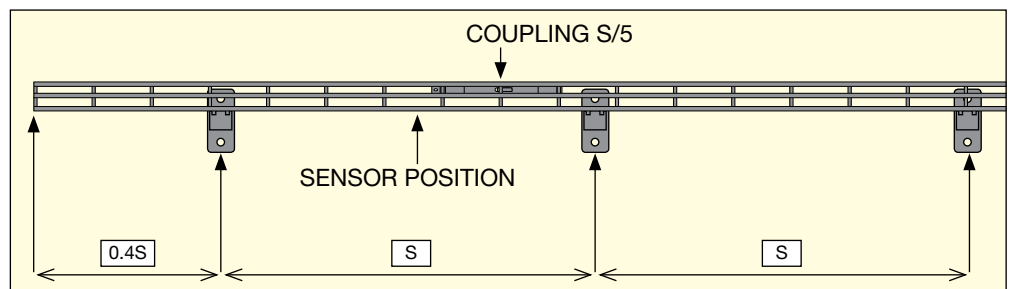
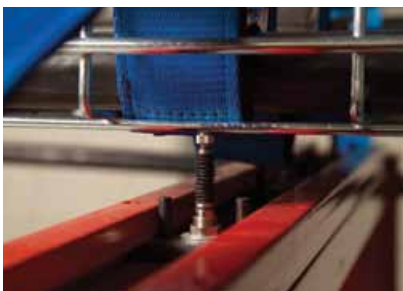
To date, Marco is the only UK manufacturer of Steel Wire Cable Tray to own such high specification in-house testing equipment, which will ensure all products are fully compliant with IEC61537 and related standards. Marco is now able to regularly carry out full deflection tests on all products, and is testing alternative configurations with a view to developing the next generation of trays for the UK and European markets.

SAFE WORKING LOAD

The cable trays were tested across two spans and a cantilever. The deflection is measured on the central span using three sensors placed on the sides and at the centre to the tray.

The test method conforms to the BSEN 61537 standard.

Note: The maximum deflection of 1/100 is always reached for a lesser load than that of the safety load. (The breaking point divided by a safety co-efficient of 1.7). CEI/61537

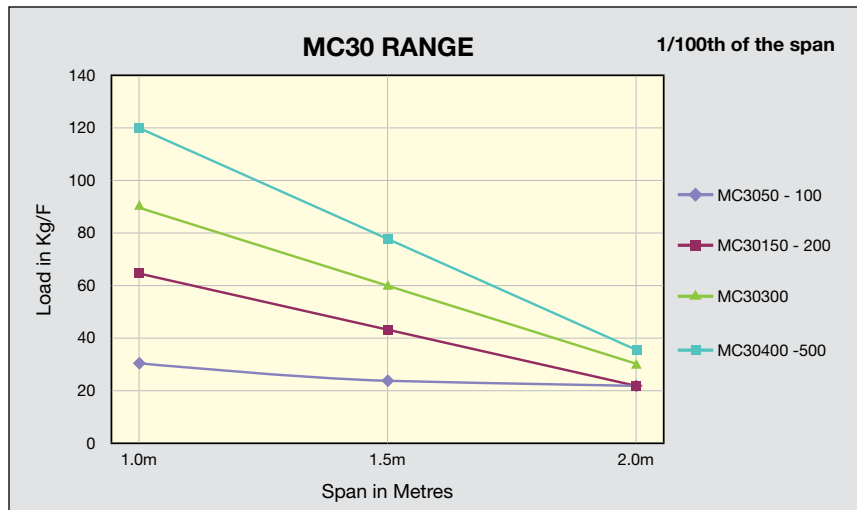




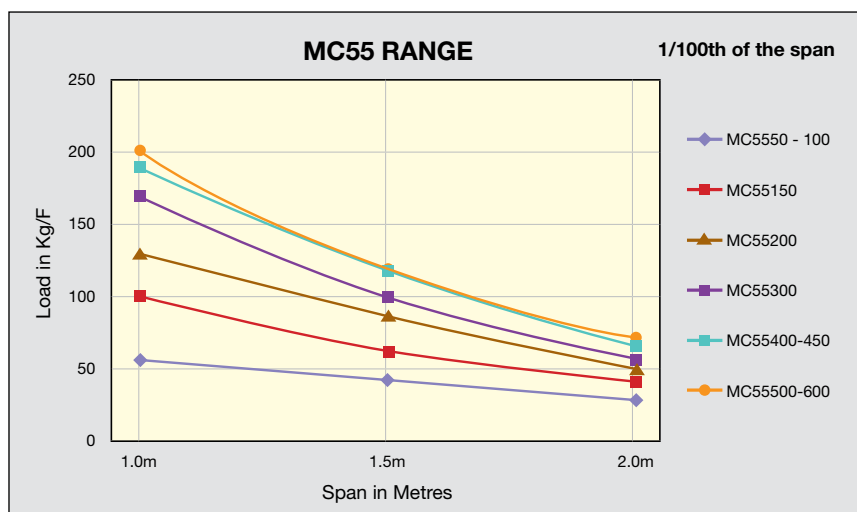
PERMISSIBLE LOAD

Permissible loads for a maximum deflection of 1/100th of the span, with a coupling positioned at 1/5th of the span from the support. The coefficient applied to the load for coupling in the middle of the span=0.7

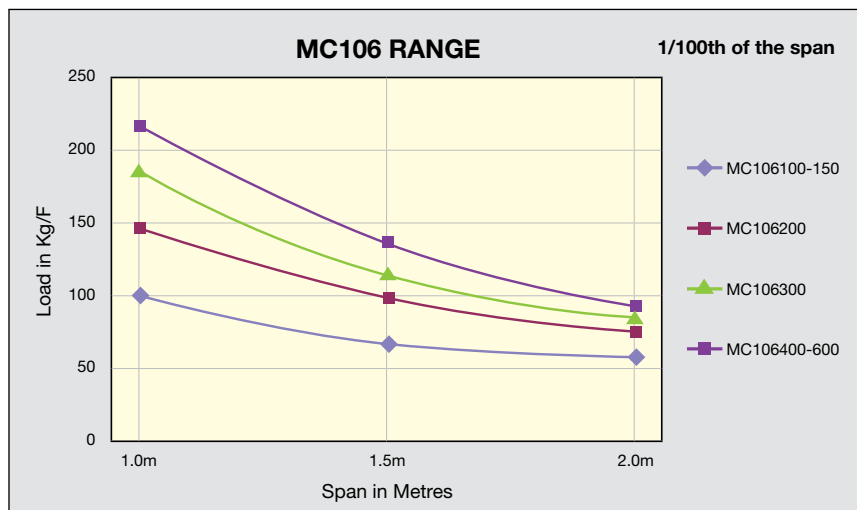
Permissible load for maximum sag = L/100 on the intermediate span, coupling at 1/5th of the span.



MC30	
Code No	Size
MC3050	30mm x 50mm
MC30100	30mm x 100mm
MC30150	30mm x 150mm
MC30200	30mm x 200mm
MC30300	30mm x 300mm
MC30400	30mm x 400mm
MC30450	30mm x 450mm
MC30500	30mm x 500mm



MC55	
Code No	Size
MC5550	55mm x 50mm
MC55100	55mm x 100mm
MC55150	55mm x 150mm
MC55200	55mm x 200mm
MC55300	55mm x 300mm
MC55400	55mm x 400mm
MC55450	55mm x 450mm
MC55500	55mm x 500mm
MC55600	55mm x 600mm



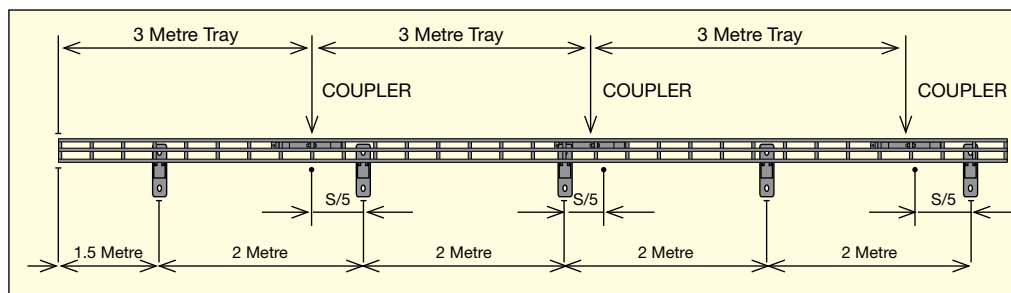
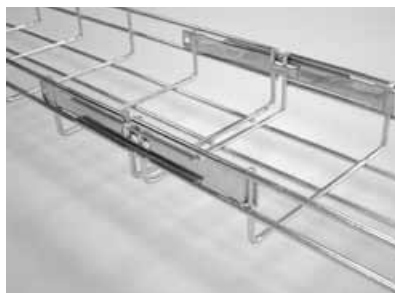
MC106	
Code No	Size
MC106100	106mm x 100mm
MC106150	106mm x 150mm
MC106200	106mm x 200mm
MC106300	106mm x 300mm
MC106400	106mm x 400mm
MC106450	106mm x 450mm
MC106500	106mm x 500mm
MC106600	106mm x 600mm



RECOMMENDED SUPPORT SPACING

There is an optimum configuration to obtain 2 metre spans without the couplings being positioned at the supports or in the middle of the spans.

To obtain this result, the first span is deliberately limited to 1.5 metres, then the supports are placed approximately every 2 metres. The coupling points are therefore always 0.5 metres from a support.



SUPPORTS

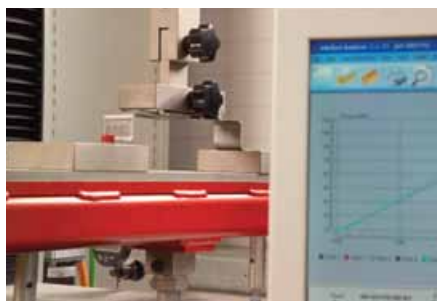
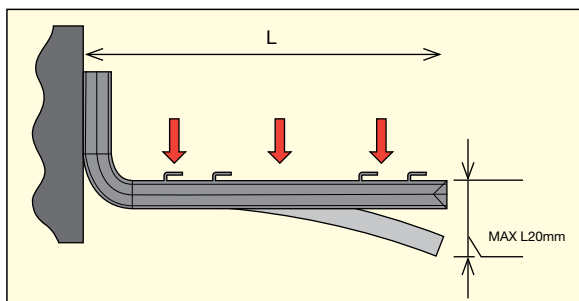
The brackets are characterized by their permissible loads (in Kg).

The hangers are characterized by their permissible torques (in Kg.m).

All Marco supports are tested and conform with the standard BSEN61537.

The safe working load (SWL) as defined by the standard is the lowest value of either:

- The load creating a deflection of $L/20$ at the end.
- The breaking load divided by 1.7, if the deflection at $L/20$ is not reached.

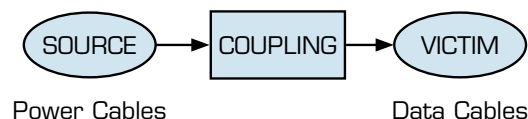


ELECTRO MAGNETIC COMPATIBILITY

Marco Cable Management engaged the services of York EMC, part of The University of York, to investigate the shielding effectiveness of Marco Steel Wire Cable Tray.

Marco Steel Wire Cable Tray was found to outperform the 200mm pacing configuration required by BS EN50174-2 proven by the independently commissioned EMC tests.

This indicates that Marco Steel Wire Cable Tray can offer a more efficient and compact installation rather than relying on spacing.





ELECTRICAL CONTINUITY

Marco Cable Management engaged the services of York EMC, part of The University of York, to measure the resistance of Steel Wire Cable Tray and a cable tray coupler.

The resistance tests were in comparison with requirements EN537:2007 clause 11.1, electrical continuity [1].

An electric current was passed through the system in order to measure the resistance of the coupler. The lower the resistance, the better the electrical continuity.

The maximum cable tray impedance per metre is set at $5m\Omega$, while the value recorded using Marco Steel Wire Cable Tray is $1.3m\Omega$, over 3 times more effective than the requirement specified.

Under the requirements of the standard, couplers must have a maximum resistance of $50m\Omega$. On average, Marco Cable Management couplers were found to have a resistance of $0.44m\Omega$, over 100 times more effective than the specified requirement.

The Steel Wire Cable Tray and Coupler exceeded the requirements of the EN 61537:2007 standard for the electrical continuity clause 11.1.

SHORT CIRCUIT TESTING

Marco Cable Management have carried out short circuit tests at an independent laboratory in Europe in order to prove that their Steel Wire Cable Tray has been designed and manufactured with sufficient strength to withstand a short circuit fault.

Marco Steel Wire Cable Tray has been tested in accordance with the standard that governs the manufacture of cable cleats, IEC 61914:2009 (Cable Cleats for Electrical Installations) in order to prove that the system can be used for installations where there is a fault requirement.

During the test, two lengths of MC106450 (106mm high x 450mm wide) Steel Wire Cable Tray were supported and attached at intervals of 1.5 metres to three pieces of unistrut supports. The trays were coupled together at 1/5th of the span (300mm from the support) using four MCQC (Marco Quick Couplers), on the walls and base of the tray. The cables used to carry the current for the short circuit were placed in a trefoil installation using Ellis Patent's 'stainless steel' Vulcan+ cleats positioned at intervals of 500mm along the length of the tray.

Testing in accordance with the standard IEC 61914:2009 clause 6.4.3, a current of 106KA was applied to the cable. An inspection of the test object then confirmed that there had been no damage to either the couplers or the tray with both appearing to have remained in their original state as prior to the tests taking place. In line with clause 6.4.4 another current of 106KA was again passed through the same test object, with an inspection once more confirming that there had been no damage to the system.

The tests confirm that Marco Steel Wire Cable Tray is produced with enough strength and quality to withstand short circuits, enabling the system to be specified on a wide range of electrical installations.

QUICK FIT STRUT CLIP (MCFUSC)

Marco Cable Management have continued their investment into Steel Wire Cable Tray with the continued production of innovative accessories, including the new Quick Fit Strut Clip (MCFUSC).

The MCFUSC is ideal for a wide range of installations, including modular builds, as it is able to be fitted prior to transit without the need of additional securing clips.

In order to prove that the MCFUSC can be used in even the most complex of installations, Marco Cable Management undertook bespoke testing to the conditions of British Standard BSEN61537.

The testing took place at Marco's in-house facilities, using a Compression and Tensile Testing Load Cell.

To determine a Safe Working Load for the MCFUSC, a test was devised by fitting a length of MC55200EZ (55 x 200mm) Steel Wire Cable Tray to a piece of strut, attached using two MCFUSC clips.

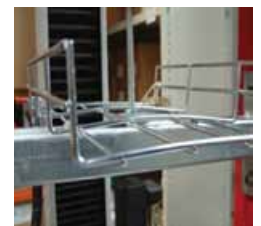
The machine was then set to pull away from the centre position up to a maximum force of 80kg, until either the Steel Wire Cable Tray deflected 5mm in height, or the MCFUSC failed.

The Steel Wire Cable Tray reached the desired deflection of 5mm with the MCFUSC holding securely in place.

Marco therefore proved that the MCFUSC has a Safe Working Load of 80Kg.



Prior to tension



Under tension



100% of all possible recycled material is reused in Marco uPVC trunking.

In order to maintain a high quality and to keep tolerances above the required level, the ratio of regrind to virgin material doesn't exceed a predetermined percentage.

Recycled material is only used in trunking bases in order to allow the fascias and accessories that are on show to be as pure white in colour as possible.

All our wire trays are manufactured from wire rod comprising 100% recycled material.

100 % of the minimal amount of scrap Steel Wire Cable Tray produced is sold locally for reprocessing. Marco production is UK based, reducing both the 'product-miles' and carbon footprint – Marco trays travel at least 300 miles less than the trays of the majority of it's competitors.

Marco, a leading uPVC Cable Management Company, and the UK's largest manufacturer of Steel Wire Cable Tray, has introduced a zero waste initiative for all internal and external operations.

As part of the initiative, electrical contractors that are retro-fitting a building and using a Marco trunking product, are encouraged to return the old UPVC trunking (regardless of the original manufacturer) to Marco for recycling and re-processing into good production.

Ian MacGregor of Marco said: "We recognise that we can extend our sustainability policy beyond our own business and re-use some of the refurbishment waste, re-processing the material to manufacture other products of the highest possible standards".

"There are also benefits to the contractor and site management company, who, by being part of the scheme, are supporting their bid to achieve a high BREEAM rating or other accreditations."

During nine years of continued and sustained growth, Marco has developed a system whereby almost zero% of all raw materials purchased end up in land fill. For example, the company regrinds any below-par production and re-cycles the material.

In terms of Steel Wire Cable Tray, any scrap produced, (of which there is very little) is sold locally for reprocessing. Marco production is UK based, reducing the 'product-miles' and carbon footprint.

Marco has now grown to the size where it is necessary to operate 24 hours a day, meaning it can now implement long runs of production of each individual tray size. This allows for a more efficient manufacturing process and results in much lower volumes of scrap. Any scrap produced, (of which there is very little) is sold locally for reprocessing.

Ian MacGregor added: "With the ability to form angles, tees, risers and other items on site, the environmental impact of using steel wire cable tray, compared to using traditional trays is significant as the reduction in the number of components needed can be breath-taking, especially when the installer considers the additional financial and environmental costs of ordering, transporting, storing, and using those additional components."