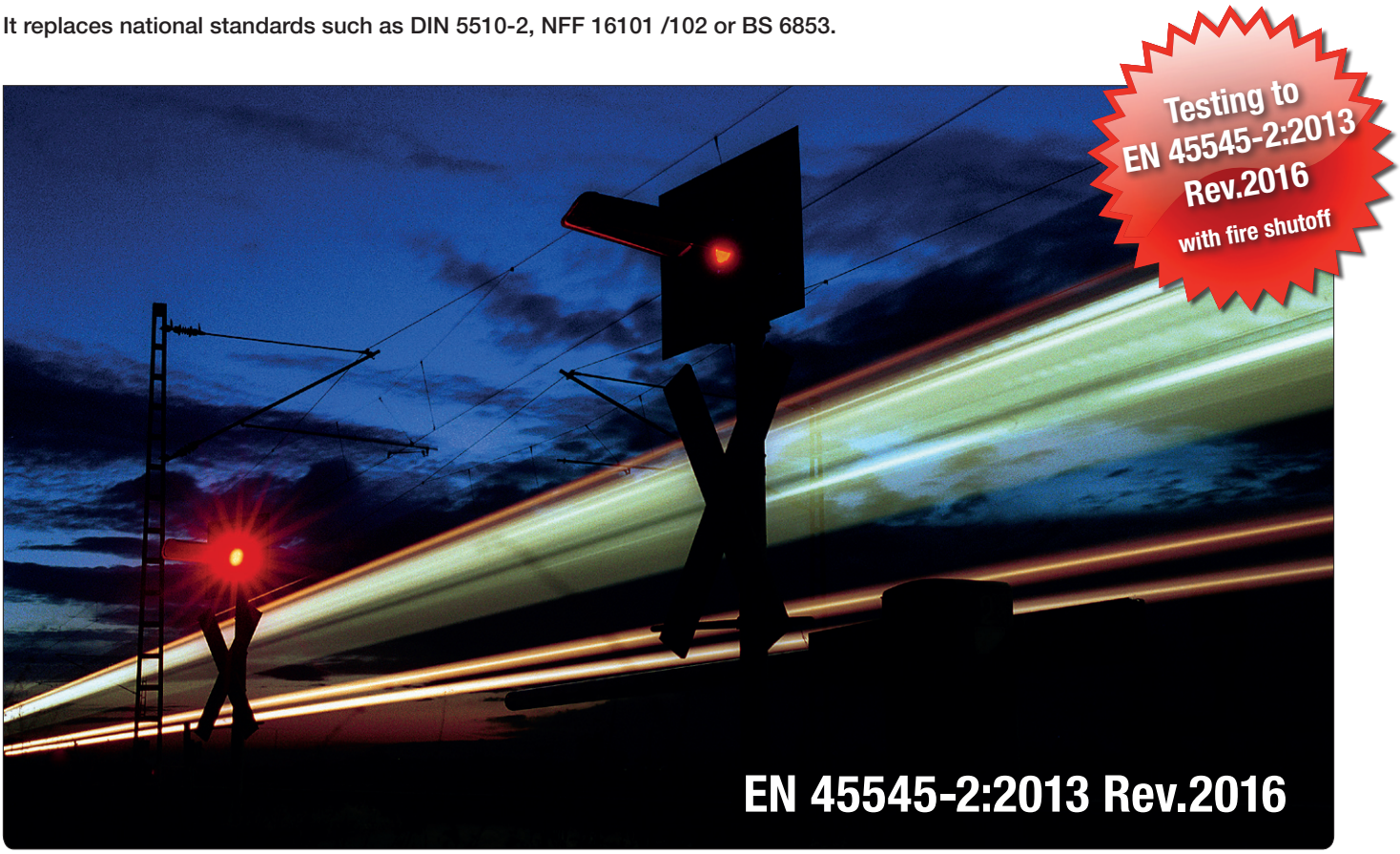
CLEAR TRACK AHEAD WITH MURRPLASTIK

System solutions for cabling in accordance with EN 45545-2:2013 Rev.2016

On 01.08.2013, the European fire safety standard EN 45545-2:2013 Rev.2016 came into force.

It replaces national standards such as DIN 5510-2, NFF 16101 /102 or BS 6853.

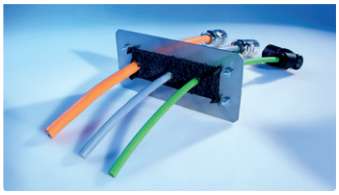


As one of the leading manufacturers of:

Cable protection conduit and fitting systems
Cable holding systems
Cable entry systems
Labelling systems
Cable drag chain systems

Murrplastik lost no time in dealing with the issues raised by the new EN 45545 standard. Building on the experience gained in ensuring compliance with national standards, Murrplastik was able to test its product range in accordance with the new EN standard at the end of 2013.
From the beginning, it was clear to Murrplastik‘s people that the only values acceptable for Murrplastik products are the HL3 values (highest classification) from the hazard level table, to give designers at vehicle manufacturers a high level of planning reliability.

For the integrity of conduit fittings and cable entry systems as defined by DIN EN 1363-1:2012-10, it was also considered important to meet the requirement t = 20 min (E 20) and t = 30 min (E 30).




Cable protection conduit and fitting systems

These products are used wherever it is necessary to protect cables and conduits from mechanical damage and to introduce them into control cabinets or components with the highest possible protection rating. The conduits in the PAT/PRT series were developed specifically for applications in railway engineering.

EWL-PAT Flexible, lightweight design for static applications for interior use
EW-PAT Flexible, medium-weight design for static applications (interior use)
EW-PRT Flexible, medium-weight design for dynamic applications (exterior use)

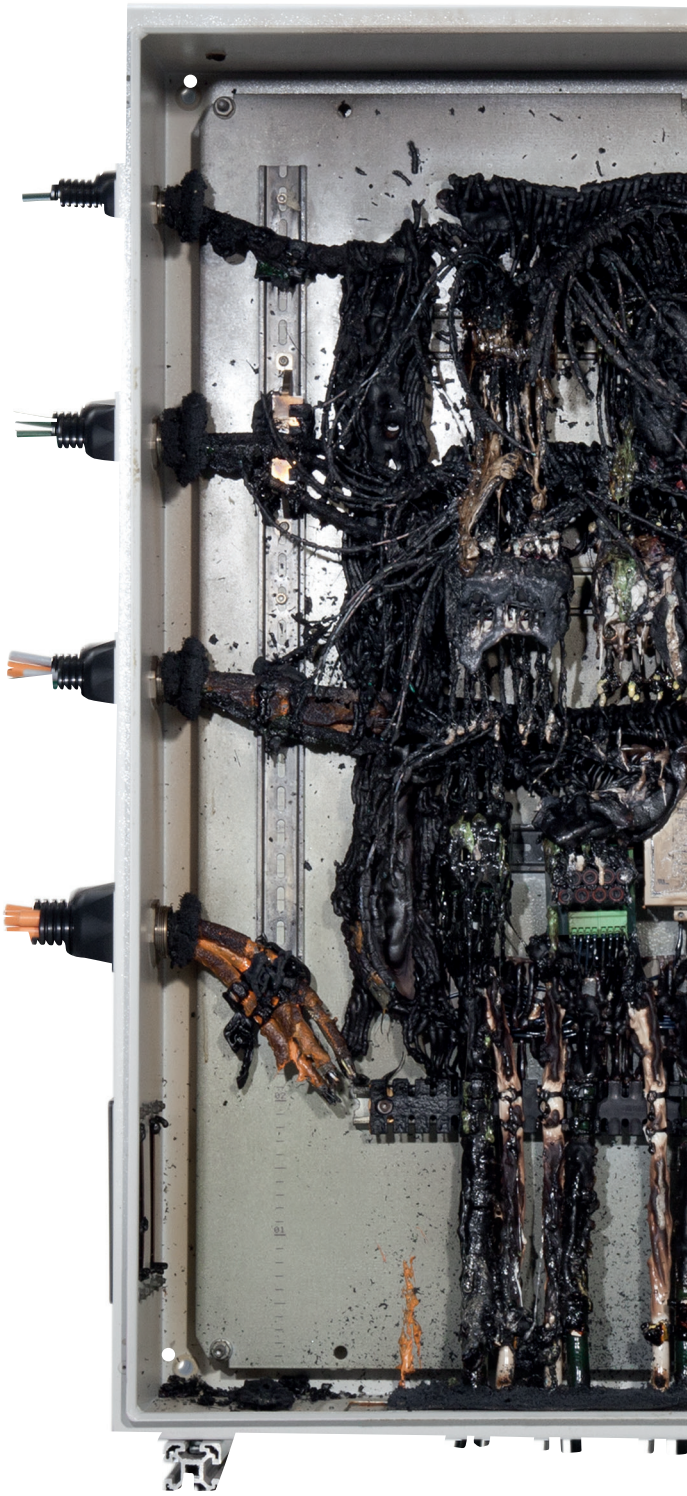
All protective conduits meet the requirements of EN 45545-2:2013 Rev.2016 and are categorized as class R22 and R23 to hazard level 3 x HL3.

For fastening, the **m-top** series of fittings is used. This series was developed together with users in the field of railway engineering.

The conduit fittings are characterized by the following advantages:

- High tightness corresponding to IP 68 to 6 bar and at the same IP 69K without additional parts in accordance with DIN EN 60529.
- Resistant to vibration due to lockable cap nut.
- Quick-assembly: Insert conduit, screw upper part tight > done.
- No parts can get lost
- Delivery condition conforms to assembly condition.
- Clamping along entire circumference, ensuring maximum tensile strength.

All fittings meet the requirements of EN 45545-2:2013 Rev.2016 and are categorised as class R22 and R23 to hazard level 3 x HL3.



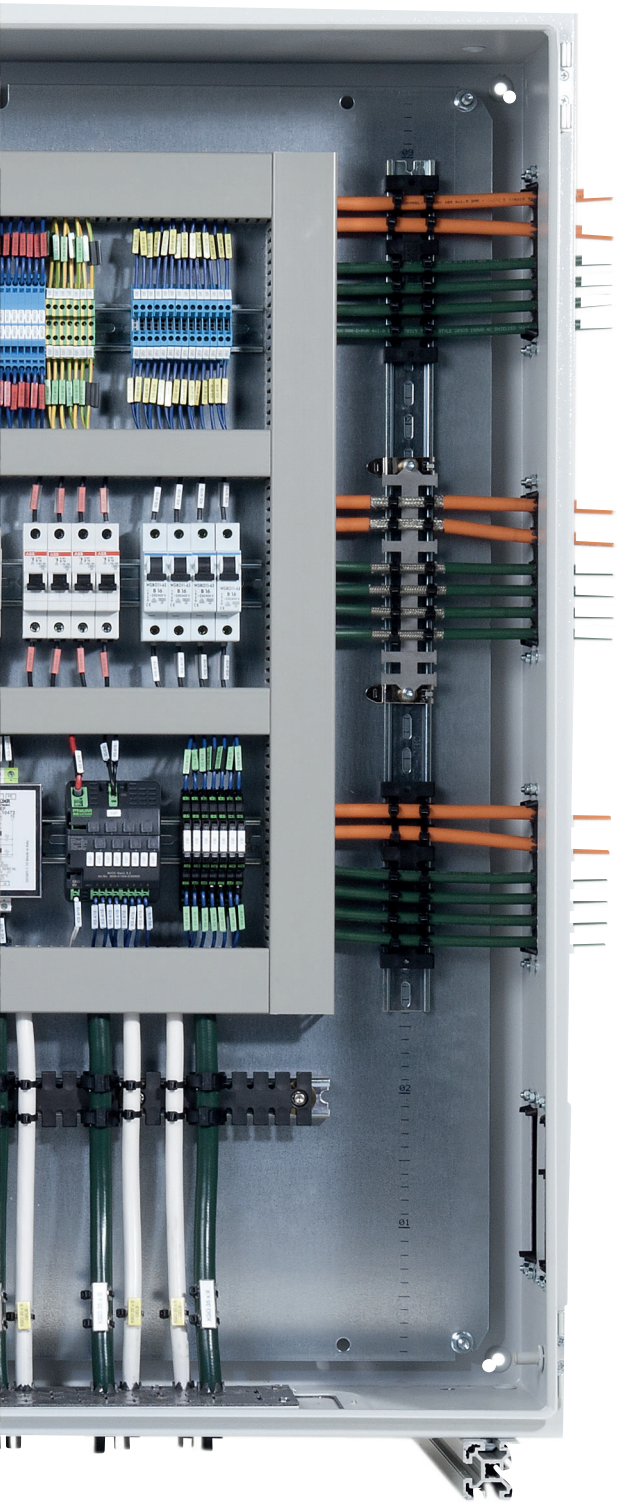
Integrity as per DIN EN 1363-1:2012-10

In EN 45545-2:2013 Rev.2016, integrity as per DIN EN 1363-1:2012-10 is of particular importance.
This defines the period for which a control cabinet or component must contain flame.
With the fire shutoff strap RAB 30 in conjunction with m-top fittings, Murrplastik passed the test at MPA Dresden.
The requirement was at least E20.
This ensures that when RAB 30 with an m-top fitting is used, a control cabinet or component meets the integrity requirements defined in DIN EN 1363-1:2012-10.

The system is completed by the robust holders. These can be easily strung together, saving space when installed. The upper part can be pivoted or removed completely, making it easier to install than products from our competitors.
This product also fulfils the requirements of EN 45545-2:2013 Rev.2016 3 x HL3.

Cable entry systems

These systems are used wherever it is necessary to run cables and conduits with a high packing density through the walls of control cabinets or components. These systems can be used to run a large number of different cables with very different diameters through the wall of a control cabinet in very confined spaces with a high protection rating (up to IP 69K). The plastic solutions have the dimensi-ons of the 24-pol heavy plug connectors. The product range includes a very wide range of diameter variants.
The metal variants (aluminium or stainless steel) are manufactured to customer specifications.
Low quantities are also available (KDP on demand).



The cable entry system fulfils the integrity requirements of DIN EN 1363-1:2012-10. The requirement here is at least E30.
The integrity requirement is fulfilled by means of a special entry plate. The material expands only above a certain temperature. Until then, the cable entry remains in the normal state and can be assembled and disassembled.
All cable entry systems with the additional ...EN fulfil the requirements of EN 45545-2:2013 Rev.2016 3 x HL3.

Cable holding systems

Also known as „cable combs“, these holders allow defined routing and fixing of cables and conduits. With a range of fastening options including

Screws
Fastening on a top hat rail
Fastening on a C-rail

this is a universal system for cable holding. Integral metal sheaths minimize the cold flow properties of the plastic. The version with a mounted tenon block allows quick and universal assembly on C-rails.
Here too, the emphasis is the fire protection properties. All products in the **ZL**… and **KAF**… cable holding systems fulfil the requirements of EN 45545-2:2013 Rev.2016 3 x HL3.

Cable drag chain systems

These products are used wherever moving conduits and cables are required. Examples include extendible battery slots and door controllers. These products can be manufactured on request in a material that fulfils the requirements of EN 45545-2:2013 Rev.2016 3 x HL3.

Testing to EN 45545-2:2013 Rev.2016 with fire shutoff

Testing to EN 45545-2:2013 Rev.2016 with fire shutoff

Labelling systems

Labelling systems from Murrplastik Systemtechnik comply with the standard EN 60204 (VDE 0113 Part 1). This standard stipulates that cables, components, and terminals must be clearly and permanently marked.

Our labelling materials are components of the products that are described in chart 2 in part 10 of EN 45545-2:2013 Rev.2016. The materials used in label plates made of PC and TPU are halogen-free and have the fire classification V0 as per UL 94.

The heat shrink tubes in the **ST-BT-H** series include a perforation. The heat shrink tubes consists of a long area for cable marking and a shorter area for wiring information. After wiring, the shorter area can be easily separated, considerably reducing the time required for wiring.

Edge protection

This edge protection is mounted on the end of metal cable conduits in underfloor installations to protect the cables from abrasion. The portfolio is completed by cable ties **KB-EN** and fabric conduit **GF-P-LS** of EN 45545-2:2013 Rev.2016.

To comply with this standard, Murrplastik Systemtechnik GmbH products must meet the following values:

- Toxicity to T 12 NF X70-100-1 and -2 600° C
- Flue gas density to T 10.03 EN ISO 5659: 25 kWm²
- Oxygen index to TO1 EN ISO 4589-2:OI

The values are defined in the classes R 22 and R 23, depending on the installation location.
The hazard levels distinguished are HL1, HL2 and HL3. Hazard level HL3 is the class with the highest requirements.

Abbreviations of requirements	Reference-test procedure	Measuring unit	Requirement, Defintion	HL1	HL2	HL3
R 22	T01 EN ISO 4589.2:0I	Oxygen-content Vol.-%	Minimum	28	28	32
	T10.03 EN ISO 5659-2: 25 kWm²	DS max. dimensionless	Maximum	600	300	150
	T12 NF X70-100-1 und -2 600°C	CITNLP dimensionless	Maximum	1,2	0,9	0,75
R 23	T01 EN ISO 4589.2:0I	Oxygen-content Vol.-%	Minimum	28	28	32
	T10.03 EN ISO 5659-2: 25 kWm²	DS max. dimensionless	Maximum	-	600	300
	T12 NF X70-100-1 und -2 600°C	CITNLP dimensionless	Maximum	-	1,8	1,5