

## Declaration of Conformity

The new TRGS 727 standard herewith replaces the until now valid TRBS 2153 standard and will continue in its place.

Within the new TRGS 727, the aspirative and pneumatic conveyance using spiral hoses/ducting with a metal helix will be taken into account separately when in context with electrostatic charges.

The resulting updates for pneumatic conveyance (pressure-conveying) are as follows:

1. Only metallic, blank, uninsulated, non-covered wires may be used as support spiral/helix.
2. The support spiral/helix is to be grounded at both ends.
3. The spiral/helix wire diameter is between 1 mm and 2 mm.
4. The distance (layer thickness) between the inner hose lining surface and the spiral/helix wire surface is between 0.7 mm and 2 mm.
5. The gradient of the spiral/helix is no larger than 30 mm.
6. The spiral/helix is integrated into a homogenous material with a specific resistance of less than  $\rho \leq 2.5 \times 10^8 \Omega\text{m}$ .
7. The inner diameter of the hose/ducting is between 50 mm and 160 mm.
8. The relative permittivity of the wall material is not greater than 5.

**For other geometric arrangements, higher values of relative permittivity or for multi-layered hoses/ducting with a support spiral/helix, the upper limit value can be calculated for the permitted specific resistance of the wall material by means of simulation calculations under the assumption of a charging current density of 1 mA/m<sup>2</sup>.**

Based on these updates, MASTERFLEX SE has carried out a comprehensive series of testing, which has confirmed the suitability of the hoses for the wide range of application areas in accordance with the below mentioned matrix.

**These results have been verified by the independent TÜV Süd institute in their technical report 713082091.**



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| Hose Type                    | Item No.        | Dusts & Bulk Solids                                                                                      |                                                                                           |                                           |                                                    | Gases & Liquids                                                      |                                 |                                      |
|------------------------------|-----------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------|---------------------------------|--------------------------------------|
|                              |                 | Zones 20, 21, 22 (inside)<br><i>Pneumatic</i> conveyance of flammable & non-flammable dusts/bulk solids* | Zones 20, 21, 22 (inside)<br><i>Aspirative</i> conveyance of flammable dusts/bulk solids* | Application in Zones 20, 21, 22 (outside) | Zone 22 or no Zone<br><i>Aspirative conveyance</i> | Zones 0, 1 & 2 (inside)<br>Conveyance of gases and flammable liquids | Application in Zone 0 (outside) | Application in Zones 1 & 2 (outside) |
| Master-PUR L-F Trivolution * | 305-xxx-101     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR L Trivolution     | 110-xxx-401     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR H Trivolution     | 111-xxx-401     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR HÜ Trivolution    | 112-xxx-101     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR HÜ-S Trivolution  | 112-xxx-902/903 | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR HX Trivolution    | 114-xxx-101     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR L-F EL *          | 310-060-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PUR L-EL              | 110-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PUR H-EL              | 111-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PUR HX-EL             | 114-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PUR L-MHR A           | 110-xxx-798     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR H-MHR A           | 111-xxx-798     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR HX-S              | 117-xxx-101     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR Performance       | 123-xxx-101     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR Inline            | 119-xxx-104     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Polderflex PUR A             | 118-xxx-701     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PE L-F EL *           | 668-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PE L-EL               | 180-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-PUR L-F Food A        | 310-xxx-571     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR L Food A          | 110-xxx-571     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR H Food A          | 111-xxx-571     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PUR HX Food A         | 114-xxx-571     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Polderflex PUR Food A        | 118-xxx-571     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-PVC L-F EL *, *2      | 340-xxx-207     | ✓                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-Clip VINYL A *, *2    | 211-xxx-307     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✗                                                                    | ✗                               | ✓                                    |
| Master-Clip VINYL EL *, *2   | 260-xxx-207     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-Clip VITON EL *, *2   | 222-xxx-207     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-Clip PTFE EL *, *2    | 263-xxx-207     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-Clip PTFE H-EL *, *2  | 261-xxx-207     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-Clip PTFE S-EL *, *2  | 262-xxx-216     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |
| Master-VAC EL *              | 670-xxx-207     | ✗                                                                                                        | ✓                                                                                         | ✓                                         | ✓                                                  | ✓                                                                    | ✓                               | ✓                                    |

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\*1 Depending on the construction type, not suitable for pneumatic conveyance.

\*2 depending on the construction type, not suitable for the conveyance of liquid media.

\*3 Please pay attention to Clip gradients < 30 mm, where a non-electro-conductive material is in contact with Ex-zones.

Gelsenkirchen, 8th July 2016

Created by: MASTERFLEX SE

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