



### 3.1 Spiral-Reinforced Conduit Systems

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|                              |     |
|------------------------------|-----|
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|------------------------------|-----|

#### Expandable Braided Sleeves

|                                                             |     |
|-------------------------------------------------------------|-----|
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# Cable Protection Systems

## Spiral-Reinforced Conduit Systems

### FlexiGuard conduits and fittings

#### PVC Conduits with steel wire spiral-reinforcement

FlexiGuard protective hoses are used to protect cables in machines and plant construction, and robotics as well as leads to switch cabinets.

#### Features and benefits

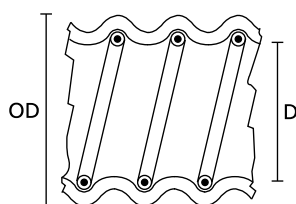
- Extremely flexible
- Excellent mechanical protection
- Good resistance to oils, acids and alkalis
- Good resistance to chemicals



FlexiGuard FG with FG-UH fitting.

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| <b>MATERIAL</b>              | Flexible Polyvinyl Chloride, cadmium free (PVC), Steel (ST) |
| <b>Operating Temperature</b> | -20 °C to +70 °C, (+80 °C, 200 h)                           |
| <b>Flammability</b>          | UL 94 HB                                                    |

**RoHS** ✓



FlexiGuard

| PART DESCRIPTION | Nominal Ø | Inside Ø (ID) | Outside Ø (OD) | Min. Bending Radius (R) | Reel Length | Article-No. |
|------------------|-----------|---------------|----------------|-------------------------|-------------|-------------|
| FG14-PVC/ST-GY   | 14        | 10.0          | 14.0           | 14                      | 10 m        | 167-00209   |
| FG17-PVC/ST-GY   | 17        | 13.0          | 17.0           | 17                      | 10 m        | 167-00211   |
| FG19-PVC/ST-GY   | 19        | 15.0          | 19.0           | 19                      | 10 m        | 167-00213   |
| FG21-PVC/ST-GY   | 21        | 16.0          | 21.0           | 21                      | 10 m        | 167-00216   |
| FG27-PVC/ST-GY   | 27        | 21.0          | 27.0           | 27                      | 10 m        | 167-00221   |
| FG36-PVC/ST-GY   | 36        | 30.0          | 36.0           | 36                      | 10 m        | 167-00229   |
| FG45-PVC/ST-GY   | 45        | 38.0          | 45.0           | 45                      | 10 m        | 167-00236   |
| FG56-PVC/ST-GY   | 56        | 48.0          | 56.0           | 56                      | 10 m        | 167-00248   |

All dimensions in mm. Subject to technical changes.



### Fittings for FlexiGuard spiral-reinforced PVC Conduits

#### FG-UH straight fitting with mounting bracket, IP54

Straight swivel bracket.  
Fulfil IP54 with FlexiGuard FG conduits.

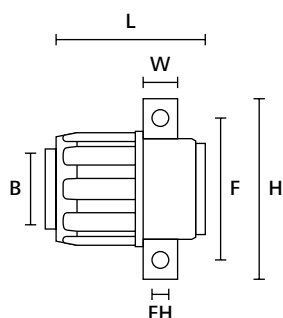
#### Features and benefits

- One piece, easy fit
- Swivel bracket
- Vibration and tension resistant
- Large bore size
- Inner ferrule protects cables
- Good resistance to chemicals



FG-UH fitting with bracket.

|                              |                    |
|------------------------------|--------------------|
| <b>MATERIAL</b>              | Polypropylene (PP) |
| <b>Operating Temperature</b> | -35 °C to +80 °C   |
| <b>Flammability</b>          | UL 94 V2           |



FlexiGuard fitting, straight with bracket

| PART DESCRIPTION | Nominal Ø | Min. Bore Size (B) | Length (L) | Width (W) | Height (H) | Hole Ø (FH) | Fixing Hole Centres (F) | Article-No. |
|------------------|-----------|--------------------|------------|-----------|------------|-------------|-------------------------|-------------|
| FG14-UH-PP-GY    | 14        | 8.8                | 41.5       | 10.0      | 40.0       | 5.7         | 29.0                    | 167-00520   |
| FG17-UH-PP-GY    | 17        | 11.1               | 45.0       | 12.0      | 50.0       | 5.7         | 37.0                    | 167-00521   |
| FG19-UH-PP-GY    | 19        | 13.0               | 47.5       | 12.0      | 50.0       | 5.7         | 37.0                    | 167-00522   |
| FG21-UH-PP-GY    | 21        | 14.8               | 49.5       | 12.0      | 50.0       | 5.7         | 37.0                    | 167-00523   |
| FG27-UH-PP-GY    | 27        | 19.4               | 52.0       | 12.5      | 57.0       | 5.7         | 43.0                    | 167-00524   |
| FG36-UH-PP-GY    | 36        | 27.9               | 54.8       | 13.0      | 67.0       | 6.7         | 53.0                    | 167-00525   |
| FG45-UH-PP-GY    | 45        | 35.6               | 58.0       | 14.0      | 79.5       | 6.7         | 65.0                    | 167-00526   |
| FG56-UH-PP-GY    | 56        | 45.9               | 60.0       | 16.5      | 92.5       | 6.7         | 76.0                    | 167-00527   |

All dimensions in mm. Subject to technical changes.



## HelaGuard accessories

### PACC Clip for corrugated conduits

Corrugated tubes can be securely fastened with the PACC clamp.

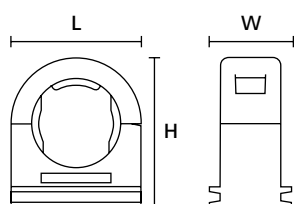
#### Features and benefits

- Easy and quick assembly with non-metallic conduits
- Lid is integrated
- Hole for fastening with screw
- Inner rib prevents conduit from slipping

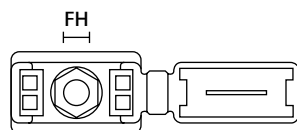


HelaGuard PACC Conduit Clip.

|                              |                      |
|------------------------------|----------------------|
| <b>MATERIAL</b>              | Polyamide 6.6 (PA66) |
| <b>Operating Temperature</b> | -50 °C to +135 °C    |
| <b>Flammability</b>          | UL 94 V2             |



HelaGuard conduit clip, side views



HelaGuard conduit clip, top view

| PART DESCRIPTION | Nominal Ø | Height (H) | Width (W) | Length (L) | Hole Ø (FH) | Pack Cont. | Article-No. |
|------------------|-----------|------------|-----------|------------|-------------|------------|-------------|
| PACC10-PA66-BK   | 10        | 26.0       | 12.0      | 23.0       | M5          | 10 pcs.    | 166-25707   |
| PACC13-PA66-BK   | 13        | 26.0       | 12.0      | 23.0       | M5          | 10 pcs.    | 166-25700   |
| PACC16-PA66-BK   | 16        | 30.0       | 12.0      | 26.0       | M5          | 10 pcs.    | 166-25701   |
| PACC21-PA66-BK   | 21        | 36.0       | 15.0      | 32.0       | M6          | 10 pcs.    | 166-25702   |
| PACC28-PA66-BK   | 28        | 45.0       | 15.0      | 41.0       | M6          | 10 pcs.    | 166-25703   |
| PACC34-PA66-BK   | 34        | 51.0       | 15.0      | 48.0       | M6          | 10 pcs.    | 166-25704   |
| PACC42-PA66-BK   | 42        | 60.0       | 15.0      | 57.0       | M6          | 5 pcs.     | 166-25705   |
| PACC54-PA66-BK   | 54        | 72.0       | 15.0      | 70.0       | M6          | 5 pcs.     | 166-25706   |

All dimensions in mm. Subject to technical changes.



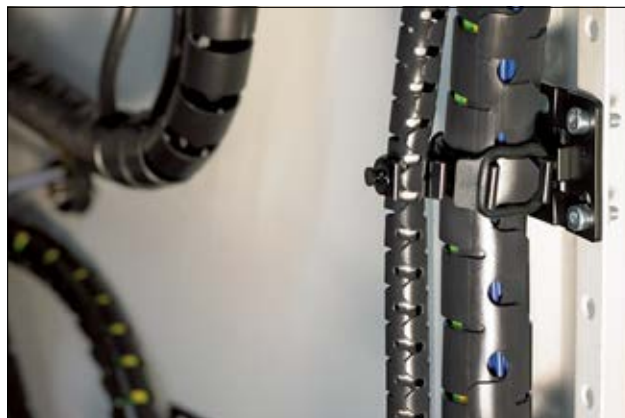
## Helawrap cable cover

### HWPP for industrial applications

Helawrap is used to bundle and protect cables and wires in the electrical industry, panel building, machine building and many other industrial applications. Helawrap is the time-saving solution for industrial applications.

#### Features and benefits

- Ideal solution for bundling, protecting and fixing cables
- Quick and effortless to apply
- Good abrasion protection
- Special profile enables branching off cable at any point
- Can be removed and reapplied often
- Available in several colours and sizes
- Handy HAT applicator tool included



Protecting and fixing cables with the Helawrap cable cover and accessory set, for instance in wiring cabinets.



Insert one or more cables into the insertion slot of the HAT applicator tool.



Place the HAT applicator tool in one end of the Helawrap cable cover.



Simply slide the HAT applicator tool through the Helawrap cover.

|                              |                                         |
|------------------------------|-----------------------------------------|
| <b>MATERIAL</b>              | Polypropylene (PP)                      |
| <b>Operating Temperature</b> | -60 °C to +110 °C, intermittent +140 °C |
| <b>Flammability</b>          | UL 94 HB                                |



| PART DESCRIPTION | Bundle Ø max. | Reel Length | Application Tool | Article-No. |
|------------------|---------------|-------------|------------------|-------------|
| HWPP8-PP-BK      | 9.0           | 25 m        | HAT8             | 161-64101   |
| HWPP8-PP-GY      | 9.0           | 25 m        | HAT8             | 161-64102   |
| HWPP8-PP-SR      | 9.0           | 25 m        | HAT8             | 161-64103   |
| HWPP8-PP-WH      | 9.0           | 25 m        | HAT8             | 161-64104   |
| HWPP16-PP-BK     | 16.0          | 25 m        | HAT16            | 161-64201   |
| HWPP16-PP-GY     | 16.0          | 25 m        | HAT16            | 161-64202   |
| HWPP16-PP-SR     | 16.0          | 25 m        | HAT16            | 161-64203   |
| HWPP16-PP-WH     | 16.0          | 25 m        | HAT16            | 161-64207   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## Helawrap cable cover

## HWPP for industrial applications

| PART DESCRIPTION | Bundle Ø max. | Reel Length | Application Tool | Article-No. |
|------------------|---------------|-------------|------------------|-------------|
| HWPP20-PP-BK     | 21.0          | 25 m        | HAT20            | 161-64301   |
| HWPP20-PP-GY     | 21.0          | 25 m        | HAT20            | 161-64302   |
| HWPP20-PP-SR     | 21.0          | 25 m        | HAT20            | 161-64303   |
| HWPP20-PP-WH     | 21.0          | 25 m        | HAT20            | 161-64304   |
| HWPP25-PP-BK     | 27.0          | 25 m        | HAT25            | 161-64401   |
| HWPP25-PP-GY     | 27.0          | 25 m        | HAT25            | 161-64402   |
| HWPP25-PP-SR     | 27.0          | 25 m        | HAT25            | 161-64403   |
| HWPP25-PP-WH     | 27.0          | 25 m        | HAT25            | 161-64407   |
| HWPP30-PP-BK     | 32.0          | 25 m        | HAT30            | 161-64501   |
| HWPP30-PP-GY     | 32.0          | 25 m        | HAT30            | 161-64502   |
| HWPP30-PP-SR     | 32.0          | 25 m        | HAT30            | 161-64503   |
| HWPP30-PP-WH     | 32.0          | 25 m        | HAT30            | 161-64504   |
| HWPP40-PP-BK     | 42.0          | 15 m        | HAT40            | 161-64601   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Helawrap cable cover

#### HWPP for home and office use

Helawrap HWPP in practical 2 metre lengths is designed for home and office use. It puts an end to the cable chaos of PCs, TVs and Hi-Fi systems.

#### Features and benefits

- Ideal solution for bundling, protecting, mounting and routing cables
- Quick and effortless to apply
- Good abrasion protection
- Special profile enables branching off cable at any point
- Can be removed and reapplied often
- Available in several colours and sizes
- Handy applicator tool included

**Complete set including application tool.**



Helawrap - Office Desktop Cable Management.



Helawrap Cable Cover - HWPP - 2 m black.



Insert one or more cables into the insertion slot of the HAT applicator tool.



Place the HAT applicator tool in one end of the Helawrap cable cover.



Simply slide the HAT applicator tool through the Helawrap cover.

|                              |                                         |
|------------------------------|-----------------------------------------|
| <b>MATERIAL</b>              | Polypropylene (PP)                      |
| <b>Operating Temperature</b> | -60 °C to +110 °C, intermittent +140 °C |
| <b>Flammability</b>          | UL 94 HB                                |



| PART DESCRIPTION | Bundle Ø max. | Length (L) | Application Tool | Article-No. |
|------------------|---------------|------------|------------------|-------------|
| HWPP16L2-PP-BK   | 16.0          | 2.0 m      | HAT16            | 161-64204   |
| HWPP16L2-PP-GY   | 16.0          | 2.0 m      | HAT16            | 161-64205   |
| HWPP16L2-PP-SR   | 16.0          | 2.0 m      | HAT16            | 161-64206   |
| HWPP16L2-PP-WH   | 16.0          | 2.0 m      | HAT16            | 161-64215   |
| HWPP25L2-PP-BK   | 27.0          | 2.0 m      | HAT25            | 161-64404   |
| HWPP25L2-PP-GY   | 27.0          | 2.0 m      | HAT25            | 161-64405   |
| HWPP25L2-PP-SR   | 27.0          | 2.0 m      | HAT25            | 161-64406   |
| HWPP25L2-PP-WH   | 27.0          | 2.0 m      | HAT25            | 161-64415   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



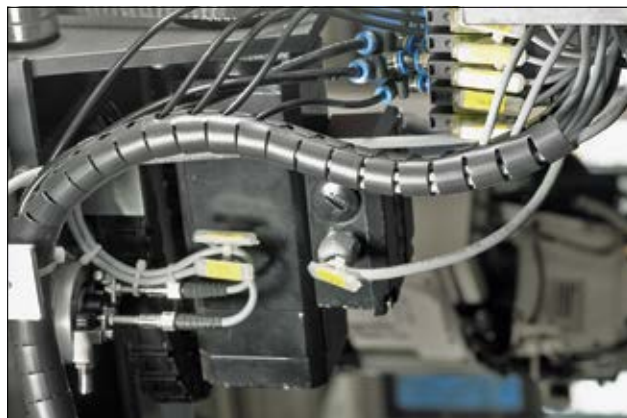
### Helawrap cable cover

#### HWPAV0 flame-retardant and abrasion-resistant

Helawrap HWPAV0 is used to bundle and protect cable and wires, especially if there is vibration and abrasion. HWPAV0 has excellent flame-retardant properties and is halogen-free.

#### Features and benefits

- Ideal solution for bundling, protecting and fixing cables
- Quick and effortless to apply
- Self-extinguishing according to UL94 V0
- Very good abrasion protection
- Special profile enables branching off cable at any point
- Can be removed and reapplied often
- Handy applicator tool included



*Cables can be branched off at any point for better, more flexible protection.*

|                                  |                                        |
|----------------------------------|----------------------------------------|
| <b>MATERIAL</b>                  | Polyamide 6 V0 (PA6V0)                 |
| <b>Operating Temperature</b>     | -40 °C to +90 °C, intermittent +120 °C |
| <b>Flammability</b>              | UL 94 V0                               |
| <b>EN 45545-2 Classification</b> | R22 HL2, R23 HL3                       |

HF ✓

RoHS ✓

| PART DESCRIPTION  | Bundle Ø max. | Reel Length | Application Tool | Article-No. |
|-------------------|---------------|-------------|------------------|-------------|
| HWPAV08-PA6V0-BK  | 9.0           | 25 m        | HAT8             | 161-63101   |
| HWPAV016-PA6V0-BK | 16.0          | 25 m        | HAT16            | 161-63201   |
| HWPAV020-PA6V0-BK | 21.0          | 25 m        | HAT20            | 161-63301   |
| HWPAV025-PA6V0-BK | 27.0          | 25 m        | HAT25            | 161-63401   |
| HWPAV030-PA6V0-BK | 32.0          | 25 m        | HAT30            | 161-63501   |

All dimensions in mm. Subject to technical changes.

**EN 45545-2** 

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



Accessories for Helawrap Cable Cover

HWClips

To complete the Helawrap cable management system various Helawrap Clips in compatible sizes are available.  
The mounting clips can be combined and adjusted individually.  
Attached to a mounting base the assembly can be screw mounted or directly stuck to the surface.

Features and benefits

- Mounts and routes Helawrap cable cover flexibly and efficiently
- Fit snugly around the cable cover and holds it tight
- Each clip can be joined to mounting plate or other clips of any size
- Each clip rotates freely
- Easily released and re-used



Helawrap self-adhesive and screw mount bases and clips.

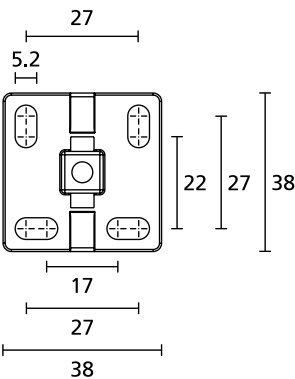
|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| MATERIAL              | Polyamide 6.6, high impact modified, heat stabilised (PA66HIRHS) |
| Operating Temperature | -40 °C to +105 °C                                                |
| Flammability          | UL 94 HB                                                         |



| PART DESCRIPTION      | for Helawrap size | Pack Cont. | Article-No. |
|-----------------------|-------------------|------------|-------------|
| HWCLIP08-PA66HIRHS-BK | 8                 | 50 pcs.    | 161-64002   |
| HWCLIP16-PA66HIRHS-BK | 16                | 50 pcs.    | 161-64004   |
| HWCLIP20-PA66HIRHS-BK | 20                | 50 pcs.    | 161-64006   |
| HWCLIP25-PA66HIRHS-BK | 25                | 50 pcs.    | 161-64008   |
| HWCLIP30-PA66HIRHS-BK | 30                | 50 pcs.    | 161-64010   |

All dimensions in mm. Subject to technical changes.

HWBase



Helawrap HWBase/HWBaseA

| PART DESCRIPTION    | Pack Cont. | Article-No. |
|---------------------|------------|-------------|
| HWBASE-PA66HIRHS-BK | 50 pcs.    | 161-64015   |

All dimensions in mm. Subject to technical changes.



## PE General Purpose Spiral Binding

### SBPE

SBPE spiral binding is suitable for standard electrical applications and panel building and plant engineering. Sizes 4 and 9 are also available in practical 5 metre lengths.

#### Features and benefits

- Organises and protects cables and hoses
- Suitable for retro-fitting
- Cables branch out at any point
- Wide range of diameters and colours



HellermannTyton SBPE Spiral Wrap.

|                              |                                        |
|------------------------------|----------------------------------------|
| <b>MATERIAL</b>              | Polyethylene (PE)                      |
| <b>Operating Temperature</b> | -60 °C to +80 °C, intermittent +120 °C |
| <b>Flammability</b>          | UL 94 HB                               |



| PART DESCRIPTION | Nominal Ø | Wall (WT) | Pitch (P) | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|------------------|-----------|-----------|-----------|---------------|---------------|-------------|-------------|
| SBPE1.5-PE-NA    | 1.5       | 0.80      | 6.0       | 1.6           | 8.0           | 30 m        | 161-41000   |
| SBPE1.5-PE-BK    | 1.5       | 0.80      | 6.0       | 1.6           | 8.0           | 30 m        | 161-41001   |
| SBPE1.5-PE-GY    | 1.5       | 0.80      | 6.0       | 1.6           | 8.0           | 30 m        | 161-41002   |
| SBPE4-PE-NA      | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 30 m        | 161-41100   |
| SBPE4-PE-BK      | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 30 m        | 161-41101   |
| SBPE4-PE-GY      | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 30 m        | 161-41102   |
| SBPE4D-PE-NA     | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 5 m         | 161-41103   |
| SBPE4D-PE-BK     | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 5 m         | 161-41104   |
| SBPE4D-PE-GY     | 4         | 1.00      | 7.8       | 5.0           | 20.0          | 5 m         | 161-41105   |
| SBPE6-PE-NA      | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 30 m        | 161-41150   |
| SBPE6-PE-BK      | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 30 m        | 161-41151   |
| SBPE6-PE-GY      | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 30 m        | 161-41154   |
| SBPE6D-PE-NA     | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 5 m         | 161-41152   |
| SBPE6D-PE-BK     | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 5 m         | 161-41153   |
| SBPE6D-PE-GY     | 6         | 1.20      | 10.0      | 7.5           | 40.0          | 5 m         | 161-41155   |
| SBPE9-PE-NA      | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 30 m        | 161-41200   |
| SBPE9-PE-BK      | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 30 m        | 161-41201   |
| SBPE9-PE-GY      | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 30 m        | 161-41202   |
| SBPE9D-PE-NA     | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 5 m         | 161-41203   |
| SBPE9D-PE-BK     | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 5 m         | 161-41204   |
| SBPE9D-PE-GY     | 9         | 1.40      | 12.5      | 10.0          | 100.0         | 5 m         | 161-41205   |
| SBPE16-PE-NA     | 16        | 1.60      | 16.0      | 20.0          | 150.0         | 30 m        | 161-41300   |
| SBPE16-PE-BK     | 16        | 1.60      | 16.0      | 20.0          | 150.0         | 30 m        | 161-41301   |
| SBPE16-PE-GY     | 16        | 1.60      | 16.0      | 20.0          | 150.0         | 30 m        | 161-41302   |

All dimensions in mm. Subject to technical changes.



### PTFE High temperature spiral binding

#### SBPTFE

SBPTFE is recommended wherever superior protection against chemical and extreme temperatures are important.

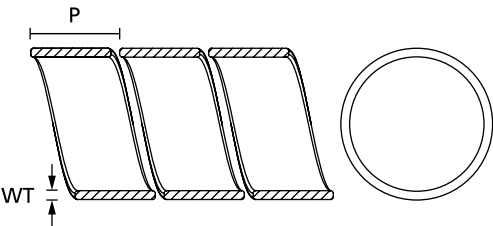
#### Features and benefits

- High temperature resistance
- Excellent fire protection
- Self-extinguishing according to UL94 V0
- Very good solvent and acid resistance
- Organises and protects cables and hoses
- Suitable for retro-fitting
- Cables branch out at any point



Spiral binding SBPTFE is ideal for extreme conditions.

|                              |                                         |
|------------------------------|-----------------------------------------|
| <b>MATERIAL</b>              | Polytetrafluoroethylene (PTFE)          |
| <b>Operating Temperature</b> | -60 °C to +260 °C, intermittent +350 °C |
| <b>Flammability</b>          | UL 94 V0                                |



Spiral binding

| PART DESCRIPTION  | Nominal Ø | Wall (WT) | Pitch (P) | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|-------------------|-----------|-----------|-----------|---------------|---------------|-------------|-------------|
| SBPTFE1.5-PTFE-NA | 1.5       | 0.50      | 6.0       | 1.6           | 8.0           | 5 m         | 161-45000   |
| SBPTFE4-PTFE-NA   | 4         | 0.70      | 7.8       | 5.0           | 20.0          | 5 m         | 161-45100   |
| SBPTFE9-PTFE-NA   | 9         | 1.00      | 12.5      | 10.0          | 100.0         | 5 m         | 161-45200   |

All dimensions in mm. Subject to technical changes.



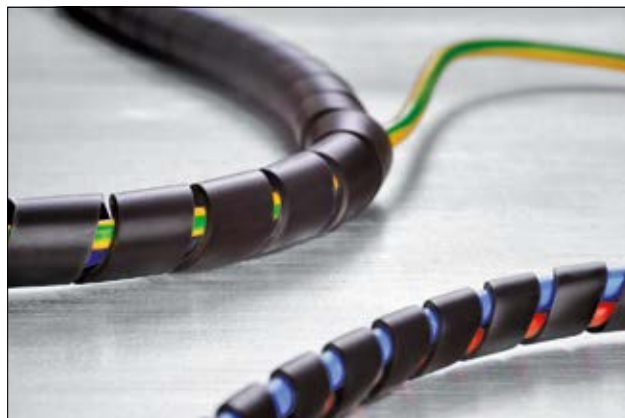
## PA Flame-retardant Spiral Binding

### SBPAV0

Due to its excellent flame protection properties, SBPAV0 spiral binding is particularly suitable for the rail and aviation industries as well as public buildings.

#### Features and benefits

- Organises and protects cables and hoses
- Self-extinguishing according to UL94 V0
- Very good protection against abrasion
- Suitable for retro-fitting
- Cables branch out at any point
- Wide range of diameters

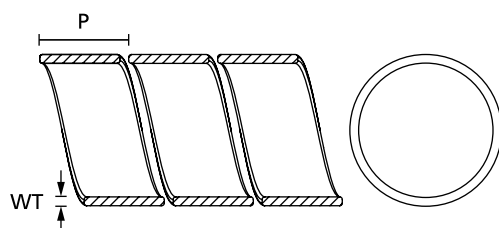


Spiral binding SBPAV0.

|                                  |                                        |
|----------------------------------|----------------------------------------|
| <b>MATERIAL</b>                  | Polyamide 6 V0 (PA6V0)                 |
| <b>Operating Temperature</b>     | -40 °C to +95 °C, intermittent +130 °C |
| <b>EN 45545-2 Classification</b> | R22 HL2, R23 HL3                       |
| <b>Flammability</b>              | UL 94 V0                               |

HF ✓

RoHS ✓



Spiral binding

| PART DESCRIPTION  | Nominal Ø | Wall (WT) | Pitch (P) | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|-------------------|-----------|-----------|-----------|---------------|---------------|-------------|-------------|
| SBPAV04-PA6V0-BK  | 4         | 0.60      | 7.8       | 5.0           | 20.0          | 30 m        | 161-44100   |
| SBPAV06-PA6V0-BK  | 6         | 0.80      | 10.0      | 7.5           | 40.0          | 30 m        | 161-44150   |
| SBPAV09-PA6V0-BK  | 9         | 1.00      | 12.5      | 10.0          | 100.0         | 30 m        | 161-44200   |
| SBPAV016-PA6V0-BK | 16        | 1.20      | 16.0      | 20.0          | 150.0         | 30 m        | 161-44300   |

All dimensions in mm. Subject to technical changes.

**EN 45545-2**

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## PP High Abrasion-resistant Wide Pitch Spiral Binding

### SPF

SPF spiral binding is especially suitable wherever high abrasion resistance and much larger cable diameters are needed, for example in the petrochemical industry and in plant construction.

#### Features and benefits

- Heavy-walled and very robust
- Excellent protection from mechanical stress
- Very high abrasion resistance
- Very good resistance to oils
- Available in diameters up to 50 mm
- Ideal for larger cable bundles



SPF spiral binding is extremely robust and abrasion resistant.

|                              |                    |
|------------------------------|--------------------|
| <b>MATERIAL</b>              | Polypropylene (PP) |
| <b>Operating Temperature</b> | -30 °C to +100 °C  |
| <b>Flammability</b>          | UL 94 HB           |



| PART DESCRIPTION | Ø (D) | Wall (WT) | Pitch (P) | Bundle Ø max. | Outside Ø (OD) | Length (L) | Article-No. |
|------------------|-------|-----------|-----------|---------------|----------------|------------|-------------|
| SPF10-PP-BK      | 10.0  | 1.50      | 10.0      | 13.0          | 13.0           | 1.0 m      | 162-20100   |
| SPF15-PP-BK      | 15.0  | 1.50      | 13.0      | 18.0          | 18.0           | 1.0 m      | 162-20150   |
| SPF20-PP-BK      | 20.0  | 1.50      | 18.0      | 23.0          | 23.0           | 1.0 m      | 162-20200   |
| SPF25-PP-BK      | 25.0  | 2.00      | 19.0      | 29.0          | 29.0           | 1.0 m      | 162-20250   |
| SPF30-PP-BK      | 30.0  | 2.00      | 20.0      | 34.0          | 34.0           | 1.0 m      | 162-20300   |
| SPF50-PP-BK      | 50.0  | 3.00      | 22.0      | 56.0          | 56.0           | -          | 162-20550   |

All dimensions in mm. Subject to technical changes.

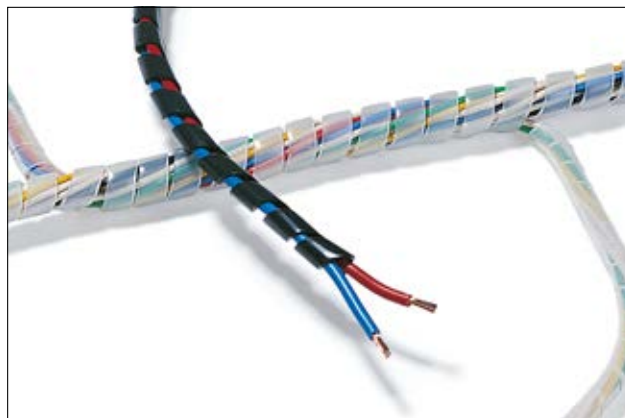


### Spiralwrap - General Purpose

#### Spiralwrap in Polyamide 6

##### Features and benefits

- Used for organising and protecting wires, cables and tubes
- Available in a wide range of diameters and colours
- Can be fitted onto cables, wires or tubes in situ
- Wires can branch out at any point and in any direction



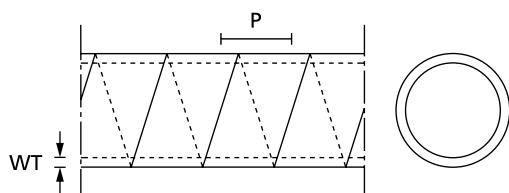
Sheathing allows flexible routing and lead-out of cables.

|                              |                   |                  |
|------------------------------|-------------------|------------------|
| <b>MATERIAL</b>              | Polyamide 6 (PA6) |                  |
| <b>Operating Temperature</b> | -40 °C to +121 °C | -40 °C to +95 °C |
| <b>Halogen-free</b>          | Yes               |                  |
| <b>Flammability</b>          | UL 94 HB          |                  |

HF ✓

RoHS ✓

RoHS ✓



Spiral binding

| PART DESCRIPTION | Ø (D) | Wall (WT) | Pitch (P) | Bundle Ø max. | Reel Length | Article-No. |
|------------------|-------|-----------|-----------|---------------|-------------|-------------|
| 1N-PA6-NA        | 2.0   | 0.30      | 4.2       | 12.0          | 3 m         | 161-00125   |
| 1N-PA6-BK        | 2.0   | 0.30      | 4.2       | 12.0          | 100 m       | 161-00128   |
| 2N-PA6-NA        | 5.1   | 0.60      | 9.5       | 50.0          | 3 m         | 161-00033   |
| 3N-PA6-NA        | 11.1  | 0.80      | 11.5      | 100.0         | 3 m         | 161-00051   |
| 3N-PA6-BK        | 12.7  | 0.89      | 12.7      | 102.0         | 30 m        | 161-05050   |
| 4N-PA6-BK        | 19.1  | 0.81      | 19.1      | 127.0         | 30 m        | 161-05071   |
| 4N-PA6-NA        | 19.1  | 0.81      | 19.1      | 127.0         | 30 m        | 161-05072   |
| 6N-PA6-NA        | 21.0  | 1.40      | 9.5       | 42.0          | 30 m        | 161-00122   |
| 6N-PA6-BK        | 21.0  | 1.40      | 9.5       | 42.0          | 30 m        | 161-00178   |
| 5N-PA6-BK        | 25.4  | 0.81      | 25.4      | 178.0         | 30 m        | 161-05078   |
| 5N-PA6-NA        | 25.4  | 0.81      | 25.4      | 178.0         | 30 m        | 161-05085   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.

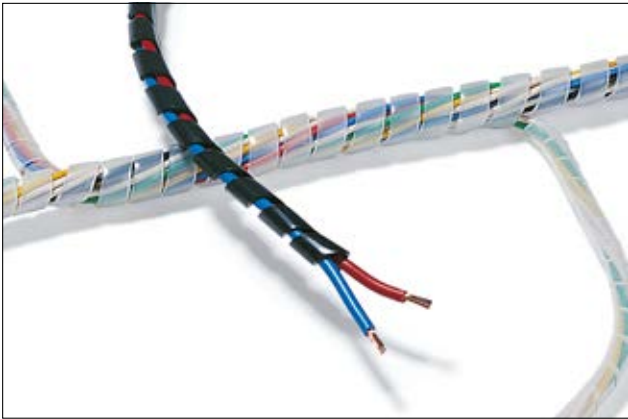


Spiralwrap - General Purpose

Polyethylene Spiralwrap

Features and benefits

- For organising and protecting wires, cables and tubes
- Wide range of diameters and colours
- Capable of retro-fitting
- Wires can branch out at any point, in any direction



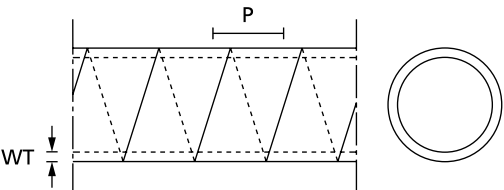
Sheathing allows flexible routing and lead-out of cables.

|                              |                   |     |
|------------------------------|-------------------|-----|
| <b>MATERIAL</b>              | Polyethylene (PE) |     |
| <b>Operating Temperature</b> | -60 °C to +88 °C  |     |
| <b>Halogen-free</b>          | No                | Yes |

RoHS ✓

HF ✓

RoHS ✓



Spiral binding

| PART DESCRIPTION | Ø (D) | Wall (WT) | Pitch (P) | Bundle Ø max. | Halogen-free | Reel Length | Article-No. |
|------------------|-------|-----------|-----------|---------------|--------------|-------------|-------------|
| 1NFP-PE-BK       | 3.2   | 0.81      | 4.8       | 12.7          | No           | 30 m        | 161-05004   |
| 1NFP-PE-NA       | 3.2   | 0.81      | 4.8       | 12.7          | Yes          | 30 m        | 161-05013   |
| 2NFP-PE-BK       | 6.4   | 1.14      | 9.5       | 50.8          | No           | 30 m        | 161-05036   |
| 2NFP-PE-NA       | 6.4   | 1.14      | 9.5       | 50.8          | Yes          | 30 m        | 161-05043   |
| 3NFP-PE-BK       | 12.7  | 1.57      | 14.3      | 102.0         | No           | 30 m        | 161-05052   |
| 3NFP-PE-NA       | 12.7  | 1.57      | 14.3      | 102.0         | Yes          | 30 m        | 161-05055   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Standard polyester braided sleeving

#### Helagaine HEGP

Helagaine HEGP braided sleeving provides abrasion protection in the automotive industry, in machine building, in panel building and in electrical appliances.

#### Features and benefits

- Made of sturdy polyester
- Highly flexible
- High abrasion resistance
- Very high surface coverage



Helagaine HEGP braided sleeving.

|                                  |                   |
|----------------------------------|-------------------|
| <b>MATERIAL</b>                  | Polyester (PET)   |
| <b>Operating Temperature</b>     | -50 °C to +150 °C |
| <b>Melting Point</b>             | +250 °C           |
| <b>EN 45545-2 Classification</b> | R22 HL3, R23 HL3  |

HF ✓

RoHS ✓

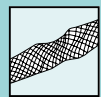
| PART DESCRIPTION | Bundle Ø min. | Bundle Ø max. | Reel Length | Tools | Article-No. |
|------------------|---------------|---------------|-------------|-------|-------------|
| HEGP05-PET-BK    | 3.0           | 9.0           | 200 m       | 45    | 170-10500   |
| HEGP06-PET-BK    | 4.0           | 11.0          | 100 m       | 45    | 170-10600   |
| HEGP08-PET-BK    | 5.0           | 12.0          | 100 m       | 45    | 170-10800   |
| HEGP10-PET-BK    | 7.0           | 15.0          | 100 m       | 45    | 170-11000   |
| HEGP15-PET-BK    | 10.0          | 20.0          | 100 m       | 45    | 170-11500   |
| HEGP20-PET-BK    | 14.0          | 26.0          | 50 m        | 45    | 170-12000   |
|                  | 14.0          | 26.0          | 200 m       | 45    | 170-12003   |
| HEGP25-PET-BK    | 18.0          | 34.0          | 50 m        | 45    | 170-12500   |
| HEGP30-PET-BK    | 20.0          | 40.0          | 50 m        | 45    | 170-13000   |
| HEGP40-PET-BK    | 30.0          | 50.0          | 50 m        | 45    | 170-14000   |
| HEGP50-PET-BK    | 40.0          | 66.0          | 50 m        | 45    | 170-15000   |

Recommended Tools: 45=HSG0. For more information on toolings please refer to the Application Tooling chapter on page 310.

All dimensions in mm. Subject to technical changes. Colour grey available on request. Cuts in any lengths. Minimum Order Quantity (MOQ) may differ from package content.

**EN 45545-2** **ECE R-118**

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## Flame-retardant polyester braided sleeving

### Helagaine HEGPETFR

This sleeve is particularly designed for abrasion protection of bundles of electrical cables. Helagaine HEGPETFR is therefore particularly recommended in applications such as public transport, aircraft industry, telecommunications, underground cables, etc.

#### Features and benefits

- Made of sturdy polyester
- Self-extinguishing
- Highly flexible
- Easy to apply over irregular shapes
- Good abrasion resistance



Helagaine HEGPETFR braided sleeving.

|                                  |                   |
|----------------------------------|-------------------|
| <b>MATERIAL</b>                  | Polyester (PET)   |
| <b>Operating Temperature</b>     | -50 °C to +150 °C |
| <b>Melting Point</b>             | +250 °C           |
| <b>EN 45545-2 Classification</b> | R22 HL2, R23 HL3  |



| PART DESCRIPTION  | Bundle Ø min. | Bundle Ø max. | Flammability                    | Reel Length | Tools | Article-No. |
|-------------------|---------------|---------------|---------------------------------|-------------|-------|-------------|
| HEGPETFR03-PET-BK | 2.0           | 5.0           | FMVSS 302, Type B               | 100 m       | 45    | 170-81000   |
| HEGPETFR04-PET-BK | 3.0           | 7.0           | FMVSS 302, Type B               | 200 m       | 45    | 170-81001   |
| HEGPETFR05-PET-BK | 4.0           | 9.0           | FMVSS 302, Type B, UL 1441 VW-1 | 200 m       | 45    | 170-81002   |
| HEGPETFR06-PET-BK | 5.0           | 11.0          | FMVSS 302, Type B, UL 1441 VW-1 | 100 m       | 45    | 170-81003   |
| HEGPETFR08-PET-BK | 7.0           | 13.0          | FMVSS 302, Type B, UL 1441 VW-1 | 100 m       | 45    | 170-81004   |
| HEGPETFR10-PET-BK | 9.0           | 15.0          | FMVSS 302, Type B, UL 1441 VW-1 | 100 m       | 45    | 170-81005   |
| HEGPETFR12-PET-BK | 11.0          | 17.0          | FMVSS 302, Type B, UL 1441 VW-1 | 100 m       | 45    | 170-81006   |
| HEGPETFR15-PET-BK | 13.0          | 20.0          | FMVSS 302, Type B, UL 1441 VW-1 | 100 m       | 45    | 170-81007   |
| HEGPETFR20-PET-BK | 18.0          | 25.0          | FMVSS 302, Type B, UL 1441 VW-1 | 50 m        | 45    | 170-81008   |
| HEGPETFR25-PET-BK | 22.0          | 30.0          | FMVSS 302, Type B, UL 1441 VW-1 | 50 m        | 45    | 170-81009   |
| HEGPETFR30-PET-BK | 27.0          | 40.0          | FMVSS 302, Type B, UL 1441 VW-1 | 50 m        | 45    | 170-81010   |
| HEGPETFR40-PET-BK | 35.0          | 50.0          | FMVSS 302, Type B, UL 1441 VW-1 | 50 m        | 45    | 170-81011   |
| HEGPETFR50-PET-BK | 45.0          | 60.0          | FMVSS 302, Type B, UL 1441 VW-1 | 50 m        | 45    | 170-81012   |

Recommended Tools: 45=HSG0. For more information on toolings please refer to the Application Tooling chapter on page 310.

All dimensions in mm. Subject to technical changes.

**EN 45545-2**



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Abrasion-resistant polyamide braided sleeving

#### Helagaine HEGPA66

Helagaine HEGPA66 is particularly suitable for vehicle manufacturing as well as plant construction.

#### Features and benefits

- Made from heavy-duty polyamide yarn
- Excellent abrasion resistance
- Highly flexible
- Easy to apply over irregular shapes
- Eases application by expanding when compressed
- Very high surface covering



Helagaine HEGPA66 braided sleeving.

|                                  |                      |
|----------------------------------|----------------------|
| <b>MATERIAL</b>                  | Polyamide 6.6 (PA66) |
| <b>Operating Temperature</b>     | -60 °C to +150 °C    |
| <b>Melting Point</b>             | +255 °C              |
| <b>EN 45545-2 Classification</b> | R22 HL3, R23 HL3     |

HF ✓

RoHS ✓

| PART DESCRIPTION  | Bundle Ø min. | Bundle Ø max. | Reel Length | Tools | Article-No. |
|-------------------|---------------|---------------|-------------|-------|-------------|
| HEGPA6604-PA66-BK | 3.0           | 6.0           | 200 m       | 45    | 170-40400   |
| HEGPA6606-PA66-BK | 4.0           | 8.0           | 100 m       | 45    | 170-40600   |
| HEGPA6608-PA66-BK | 5.0           | 10.0          | 100 m       | 45    | 170-40800   |
| HEGPA6610-PA66-BK | 7.0           | 12.0          | 100 m       | 45    | 170-41000   |
| HEGPA6612-PA66-BK | 8.0           | 14.0          | 100 m       | 45    | 170-41200   |
| HEGPA6616-PA66-BK | 12.0          | 18.0          | 50 m        | 45    | 170-41600   |
| HEGPA6620-PA66-BK | 15.0          | 23.0          | 50 m        | 45    | 170-42000   |
| HEGPA6625-PA66-BK | 18.0          | 28.0          | 50 m        | 45    | 170-42500   |
| HEGPA6630-PA66-BK | 25.0          | 32.0          | 50 m        | 45    | 170-43000   |
| HEGPA6640-PA66-BK | 30.0          | 44.0          | 50 m        | 45    | 170-44000   |
| HEGPA6660-PA66-BK | 50.0          | 65.0          | 50 m        | 45    | 170-46000   |

Recommended Tools: 45=HSG0. For more information on toolings please refer to the Application Tooling chapter on page 310.

All dimensions in mm. Subject to technical changes.

**EN 45545-2** **ECE R-118**

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## Self-closing polyester sleeving

### Helagaine Twist-In

Helagaine Twist-In is used to bundle and protect pre-terminated cables in machine-building and automation, electrical installations and automobile and truck manufacturing. Helagaine Twist-In is also available in practical 2 m and 5 m lengths for use in the home or office.

#### Features and benefits

- Self-closing sleeve made of sturdy polyester
- Provides very good protection against abrasion
- Ideal for retro-fitting
- Quick and easy installation and removal
- Allows for inspection and maintenance



*Helagaine Twist-In enables easy access to cables and wires for assembly, inspection and maintenance.*

|                              |                   |
|------------------------------|-------------------|
| <b>MATERIAL</b>              | Polyester (PET)   |
| <b>Operating Temperature</b> | -50 °C to +150 °C |
| <b>Melting Point</b>         | +240 °C           |

**RoHS** ✓

| PART DESCRIPTION               | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|--------------------------------|---------------|---------------|-------------|-------------|
| HELAGINE TWIST-IN-FR 05-PET-BK | 4.0           | 5.0           | 150 m       | 170-65082   |
| HELAGINE TWIST-IN-FR 08-PET-BK | 5.0           | 8.0           | 100 m       | 170-65083   |
| HELAGINE TWIST-IN-FR 13-PET-BK | 10.0          | 13.0          | 50 m        | 170-65084   |
| HELAGINE TWIST-IN-FR 16-PET-BK | 13.0          | 16.0          | 50 m        | 170-65085   |
| HELAGINE TWIST-IN-FR 19-PET-BK | 16.0          | 19.0          | 25 m        | 170-65086   |
| HELAGINE TWIST-IN-FR 25-PET-BK | 19.0          | 25.0          | 25 m        | 170-65087   |
| HELAGINE TWIST-IN-FR 29-PET-BK | 25.0          | 29.0          | 15 m        | 170-65088   |
| HELAGINE TWIST-IN-FR 32-PET-BK | 29.0          | 32.0          | 15 m        | 170-65089   |
| HELAGINE TWIST-IN-FR 38-PET-BK | 32.0          | 38.0          | 15 m        | 170-65090   |
| HELAGINE TWIST-IN-FR 50-PET-BK | 38.0          | 50.0          | 15 m        | 170-65091   |

All dimensions in mm. Subject to technical changes.

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Meta-aramid braided sleeving

#### Helagaine HEGMAN

Helagaine HEGMAN provides excellent mechanical protection for applications involving high temperatures and fire-protection, particularly in the aerospace, military, railway and ship-building industries.

#### Features and benefits

- Made of non-flammable meta-aramid
- Extremely flexible
- High expansion for easy installation over long lengths
- Optimal mechanical protection for harnesses
- Able to withstand the most severe environments
- Superior protection against abrasion, flames and high temperatures
- Highly resistant to radiation and fluids



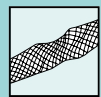
*Helagaine HEGMAN braided sleeving.*

|                              |                                                    |
|------------------------------|----------------------------------------------------|
| <b>MATERIAL</b>              | Polyaramid Polymetaphenylene Isophthalamide (PMPI) |
| <b>Operating Temperature</b> | -60 °C to +240 °C                                  |
| <b>Melting Point</b>         | Does not melt / Carbonisation above +370 °C        |

**RoHS** ✓

| PART DESCRIPTION  | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|-------------------|---------------|---------------|-------------|-------------|
| HEGMAN-02-PMPI-GN | 1.0           | 2.0           | 100 m       | 170-02100   |
| HEGMAN-04-PMPI-GN | 2.0           | 4.0           | 100 m       | 170-02101   |
| HEGMAN-06-PMPI-GN | 4.0           | 8.0           | 100 m       | 170-02102   |
| HEGMAN-08-PMPI-GN | 6.0           | 12.0          | 50 m        | 170-02103   |
| HEGMAN-10-PMPI-GN | 8.0           | 16.0          | 50 m        | 170-02104   |
| HEGMAN-15-PMPI-GN | 10.0          | 20.0          | 50 m        | 170-02105   |
| HEGMAN-20-PMPI-GN | 12.0          | 24.0          | 50 m        | 170-02106   |
| HEGMAN-25-PMPI-GN | 15.0          | 30.0          | 50 m        | 170-02107   |
| HEGMAN-30-PMPI-GN | 20.0          | 40.0          | 50 m        | 170-02108   |

All dimensions in mm. Subject to technical changes.



## Water and oil repellent meta-aramid braided sleeving

### Helagaine HEGMANWO

Helagaine HEGMANWO is especially resistant to water and oil and is designed for applications requiring mechanical protection at high temperatures, particularly in the aerospace, military, railway and ship-building industries.

#### Features and benefits

- Made of non-flammable meta-aramid
- Water and oil-repellent
- Extremely flexible
- High expansion for easy installation over long lengths
- Optimal mechanical protection for harnesses
- Able to withstand the most severe environments
- Superior protection against abrasion, flames and high temperatures
- Highly resistant to radiation, microorganisms and fluids
- Also very resistant to acids and alkali



Helagaine HEGMANWO braided sleeving.

|                              |                                                    |
|------------------------------|----------------------------------------------------|
| <b>MATERIAL</b>              | Polyaramid Polymetaphenylene Isophthalamide (PMPI) |
| <b>Operating Temperature</b> | -60 °C to +240 °C                                  |
| <b>Melting Point</b>         | Does not melt / Carbonisation above +370 °C        |

**RoHS** ✓

| PART DESCRIPTION    | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|---------------------|---------------|---------------|-------------|-------------|
| HEGMANWO-02-PMPI-GN | 1.0           | 2.0           | 100 m       | 170-02000   |
| HEGMANWO-04-PMPI-GN | 2.0           | 4.0           | 100 m       | 170-02001   |
| HEGMANWO-06-PMPI-GN | 4.0           | 8.0           | 100 m       | 170-02002   |
| HEGMANWO-08-PMPI-GN | 6.0           | 12.0          | 50 m        | 170-02003   |
| HEGMANWO-10-PMPI-GN | 8.0           | 16.0          | 50 m        | 170-02004   |
| HEGMANWO-15-PMPI-GN | 10.0          | 20.0          | 50 m        | 170-02005   |
| HEGMANWO-20-PMPI-GN | 12.0          | 24.0          | 50 m        | 170-02006   |
| HEGMANWO-25-PMPI-GN | 15.0          | 30.0          | 50 m        | 170-02007   |
| HEGMANWO-30-PMPI-GN | 20.0          | 40.0          | 50 m        | 170-02008   |

All dimensions in mm. Subject to technical changes.



### Self-closing, EMI protective sleeving

#### Helagaine Twist-In-EMIZ

Helagaine Twist-In-EMIZ is used to bundle and protect cables against ElectroMagnetic Interferences (EMI). Designed specifically for the railway industry, Twist-In-EMIZ can also be used in many other sectors, such as the naval and automotive industries.

#### Features and benefits

- Self-closing sleeve made of tinned copper and polyester monofilament
- High-performance electromagnetic protection thanks to its patented System Z
- Its EMC shielding capabilities( > 60 dB) provide highly effective attenuation of electromagnetic interference, protecting people and systems
- Optimal fire protection
- Very good protection against abrasion, vibration, impact and salt spray
- Certified conformity with railway standard EN45545-2: R22 HL3, R23 HL3
- Lightweight, repositionable and very flexible
- Quick and easy installation
- Allows for inspection, maintenance and retro-fitting
- For effective EMI protection, we recommend grounding at both ends, ideally with 360° shielding, on metal connectors



Twist-In-EMIZ shielding cables from electromagnetic interference (EMI).

|                                  |                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------|
| <b>MATERIAL</b>                  | Tin-plated copper (SNCU), Polyester (PET)                                                        |
| <b>Operating Temperature</b>     | -65 °C to +150 °C                                                                                |
| <b>EMI requirements</b>          | Tested from 10 kHz to 100 MHz according to IEC 62153-4-3 (triaxial method)<br>Results on request |
| <b>EN 45545-2 Classification</b> | R22 HL3, R23 HL3                                                                                 |

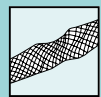


| PART DESCRIPTION             | Bundle Ø min. | Bundle Ø max. | Reel Length | Article-No. |
|------------------------------|---------------|---------------|-------------|-------------|
| Twist-In-EMIZ-05-SNCU/PET-ML | 1.0           | 5.0           | 100 m       | 170-01250   |
| Twist-In-EMIZ-08-SNCU/PET-ML | 5.0           | 8.0           | 100 m       | 170-01251   |
| Twist-In-EMIZ-13-SNCU/PET-ML | 8.0           | 13.0          | 50 m        | 170-01252   |
| Twist-In-EMIZ-19-SNCU/PET-ML | 13.0          | 19.0          | 25 m        | 170-01253   |
| Twist-In-EMIZ-25-SNCU/PET-ML | 19.0          | 25.0          | 25 m        | 170-01254   |
| Twist-In-EMIZ-32-SNCU/PET-ML | 25.0          | 32.0          | 15 m        | 170-01255   |
| Twist-In-EMIZ-38-SNCU/PET-ML | 32.0          | 38.0          | 15 m        | 170-01256   |
| Twist-In-EMIZ-50-SNCU/PET-ML | 38.0          | 50.0          | 15 m        | 170-01257   |
| Twist-In-EMIZ-80-SNCU/PET-ML | 50.0          | 80.0          | 10 m        | 170-01258   |

All dimensions in mm. Subject to technical changes.

**EN 45545-2**

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



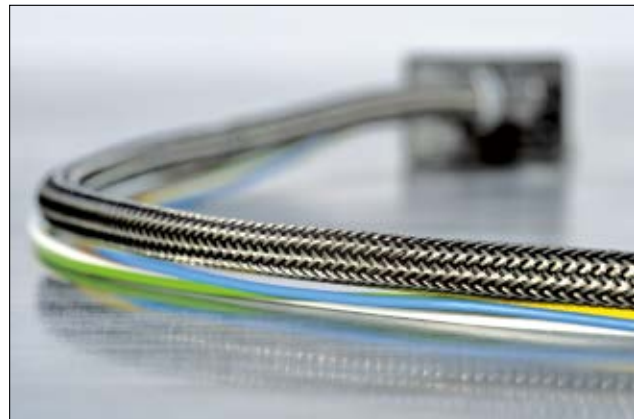
## Braided sleeving for electromagnetic protection

### Helagaine HEGEMIP

Helagaine HEGEMIP braided sleeving is used for highly sensitive electronics, such as in machines, military equipment and automobiles.

#### Features and benefits

- Excellent electromagnetic protection
- Extremely flexible, expandable and easy to apply
- No kinks or ruptures even when bent at sharp angles
- Superior abrasion protection
- Particularly suitable for applications with restricted space or requiring movement
- Inner disposable tube protects sleeve from deformation and allows for easy insertion of cables
- Fulfils the requirements of IEC CISPR25 for radio disturbances in vehicles, boats and engines



HEGEMIP braided sleeving: reliable protection from electromagnetic radiation.

|                              |                                                         |
|------------------------------|---------------------------------------------------------|
| <b>MATERIAL</b>              | Polyester, halogen free (PET), Tin-plated copper (SNCU) |
| <b>Operating Temperature</b> | -40 °C to +150 °C                                       |
| <b>Melting Point</b>         | +329 °F (200 °C)                                        |
| <b>EMI requirements</b>      | 10 kHz to 1 GHz according to CISPR25 (DIN VDE 0879-2)   |

HF ✓

RoHS ✓

| PART DESCRIPTION         | Ø (D) | Bundle Ø min. | Bundle Ø max. | Weight  | Reel Length | Article-No. |
|--------------------------|-------|---------------|---------------|---------|-------------|-------------|
| HEGEMIP04-PET/SNCU-BK/ML | 4.0   | 4.0           | 6.0           | 22 g/m  | 100 m       | 173-00400   |
| HEGEMIP08-PET/SNCU-BK/ML | 8.0   | 8.0           | 11.0          | 36 g/m  | 100 m       | 173-00800   |
| HEGEMIP10-PET/SNCU-BK/ML | 10.0  | 8.0           | 13.0          | 44 g/m  | 50 m        | 173-01000   |
| HEGEMIP12-PET/SNCU-BK/ML | 12.0  | 10.0          | 15.0          | 48 g/m  | 50 m        | 173-01200   |
| HEGEMIP14-PET/SNCU-BK/ML | 14.0  | 12.0          | 18.0          | 58 g/m  | 100 m       | 173-01400   |
| HEGEMIP16-PET/SNCU-BK/ML | 16.0  | 14.0          | 20.0          | 73 g/m  | 100 m       | 173-01600   |
| HEGEMIP18-PET/SNCU-BK/ML | 18.0  | 16.0          | 22.0          | 79 g/m  | 50 m        | 173-01800   |
| HEGEMIP20-PET/SNCU-BK/ML | 20.0  | 18.0          | 25.0          | 100 g/m | 50 m        | 173-02000   |

All dimensions in mm. Subject to technical changes.



### Electromagnetic protection braided sleeving for defence applications

#### Helagaine HEGEMIP-VG

Helagaine HEGEMIP-VG provides electromagnetic protection for the defence industry.

#### Features and benefits

- Excellent electromagnetic protection
- Very flexible, expandable and easy to apply
- Especially suitable for applications in tight areas or requiring movement
- Inner disposable tube protects sleeve from deformation and allows for easy insertion of cables
- Very good abrasion resistance
- Approved to military norm VG 96936-10 / Type A



HEGEMIP-VG braided sleeving with VG approval for defence applications.

|                              |                          |
|------------------------------|--------------------------|
| <b>MATERIAL</b>              | Tin-plated copper (SNCU) |
| <b>Operating Temperature</b> | -65 °C to +150 °C        |

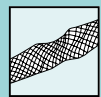
**RoHS** ✓

| PART DESCRIPTION       | Ø (D) | Bundle Ø min. | Bundle Ø max. | Weight  | Reel Length | Article-No. |
|------------------------|-------|---------------|---------------|---------|-------------|-------------|
| HEGEMIP-VG03-SNCU-ML   | 3.0   | 3.5           | 5.0           | 19 g/m  | 500 m       | 173-00200   |
| HEGEMIP-VG04-SNCU-ML   | 4.0   | 4.5           | 7.0           | 30 g/m  | 500 m       | 173-00201   |
| HEGEMIP-VG06-SNCU-ML   | 6.0   | 5.5           | 8.5           | 37 g/m  | 500 m       | 173-00202   |
| HEGEMIP-VG07.5-SNCU-ML | 7.5   | 7.5           | 13.5          | 71 g/m  | 500 m       | 173-00203   |
| HEGEMIP-VG10-SNCU-ML   | 10.0  | 13.0          | 17.5          | 96 g/m  | 250 m       | 173-00204   |
| HEGEMIP-VG12.5-SNCU-ML | 12.5  | 15.0          | 19.5          | 100 g/m | 200 m       | 173-00205   |
| HEGEMIP-VG20-SNCU-ML   | 20.0  | 19.0          | 30.0          | 265 g/m | 100 m       | 173-00206   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## Electromagnetic protection braided sleeving for hybrid automobiles

### Helagaine HEGEMIP-HY

Helagaine HEGEMIP-HY provides electromagnetic protection in hybrid automobiles.

#### Features and benefits

- Excellent electromagnetic protection
- Extremely flexible, expandable and easy to apply
- No kinks or ruptures even when bent at sharp angles
- Superior abrasion protection
- Special copper alloy for enhanced protection against salt spray
- Particularly suitable for applications with restricted space or requiring movement
- Fulfils the requirements of IEC CISPR25 for radio disturbances in vehicles, boats and engines



HEGEMIP-HY braided sleeving: EMI protection for hybrid automobiles.

|                              |                                                       |
|------------------------------|-------------------------------------------------------|
| <b>MATERIAL</b>              | Polyester (PET), Tin-plated copper (SNCU)             |
| <b>Operating Temperature</b> | -40 °C to +150 °C                                     |
| <b>EMI requirements</b>      | 10 kHz to 1 GHz according to CISPR25 (DIN VDE 0879-2) |

HF ✓

RoHS ✓

| PART DESCRIPTION            | Ø (D) | Bundle Ø min. | Bundle Ø max. | Weight  | Reel Length | Article-No. |
|-----------------------------|-------|---------------|---------------|---------|-------------|-------------|
| HEGEMIP-HY20-PET/SNCU-OG/SR | 20.0  | 19.0          | 27.0          | 72 g/m  | 50 m        | 173-02001   |
| HEGEMIP-HY30-PET/SNCU-OG/SR | 30.0  | 25.0          | 35.0          | 101 g/m | 50 m        | 173-03000   |
| HEGEMIP-HY35-PET/SNCU-OG/SR | 35.0  | 30.0          | 40.0          | 120 g/m | 50 m        | 173-03501   |
| HEGEMIP-HY40-PET/SNCU-OG/SR | 40.0  | 30.0          | 50.0          | 180 g/m | 50 m        | 173-04000   |
| HEGEMIP-HY50-PET/SNCU-OG/SR | 50.0  | 40.0          | 60.0          | 204 g/m | 50 m        | 173-05000   |
| HEGEMIP-HY60-PET/SNCU-OG/SR | 60.0  | 50.0          | 70.0          | 299 g/m | 25 m        | 173-06000   |

All dimensions in mm. Subject to technical changes.



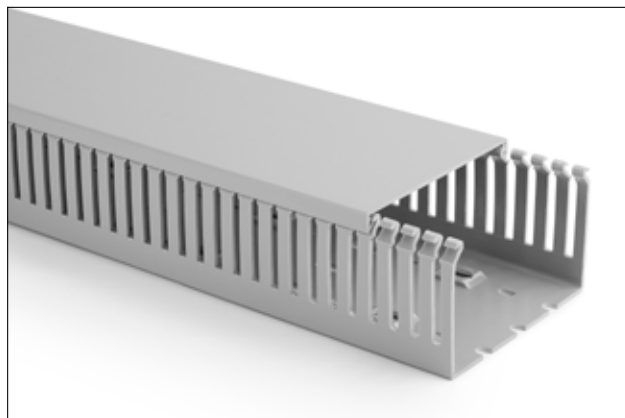
## Rigid PVC wiring ducts

### HelaDuct HTWD-PN for small-diameter wires (metric sizes)

HelaDuct HTWD-PN wiring ducts are used to route and protect wires in control panels and switching systems.

#### Features and benefits

- Narrow slots suitable for small-diameter wires
- Smooth, burr-free edges protect installers from injury and wires from damage
- Fingers can be removed with no sharp edges at pre-notched snap-off points
- Further pre-notched snap-off point at base of sidewall allow cutting out and removing sections of sidewall with no sharp edges
- Raised mounting points for easily and securely fastening wire retainers and other accessories prior to cabling
- Wire retainers and accessories leave no protruding parts below surface of duct
- Duct covers are easy to mount and remove, yet hold securely even in a vertical position and under vibration
- Cover is flush with side of duct, allowing for tight, contiguous placement of ducts
- Additional retainer nub on fingers on ducts height 80 and above to prevent cables from slipping
- Base perforation according to DIN EN 50085

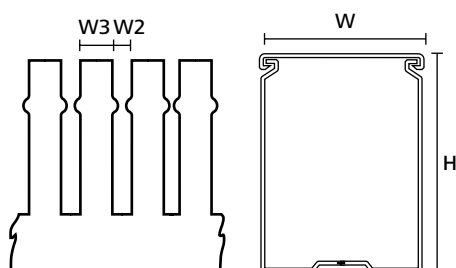
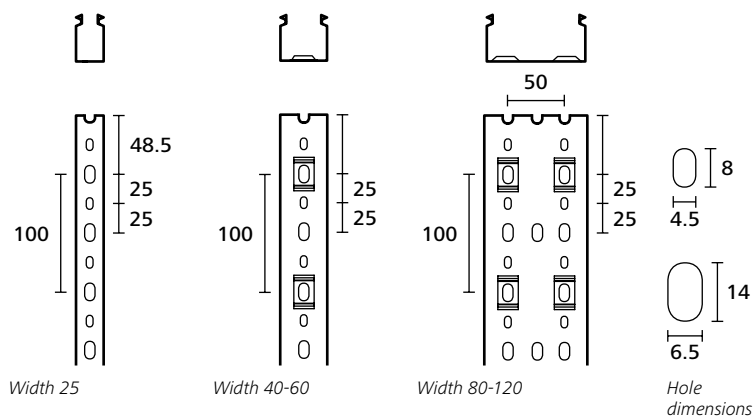


HelaDuct HTWD-PN - narrow finger wiring duct.

|                              |                         |
|------------------------------|-------------------------|
| <b>MATERIAL</b>              | Polyvinylchloride (PVC) |
| <b>Length (L)</b>            | 2 m                     |
| <b>Operating Temperature</b> | -5 °C to +65 °C         |
| <b>Flammability</b>          | UL 94 V0                |

**RoHS** ✓

#### Base perforation according to DIN EN50085, HelaDuct wiring ducts HTWD-PN / PW



Wiring duct HTWD-PN



## Rigid PVC wiring ducts

HelaDuct HTWD-PN for small-diameter wires (metric sizes)

| PART DESCRIPTION       | Width (W) | Height (H) | Width (W2) | Width (W3) | Pack Cont. | Article-No. |
|------------------------|-----------|------------|------------|------------|------------|-------------|
| HTWD-PN-25X40-PVC-GY   | 25.0      | 40.0       | 4.0        | 6.0        | 72 m       | 184-10068   |
| HTWD-PN-25X60-PVC-GY   | 25.0      | 60.0       | 4.0        | 6.0        | 48 m       | 184-10138   |
| HTWD-PN-25X80-PVC-GY   | 25.0      | 80.0       | 4.0        | 6.0        | 48 m       | 184-10198   |
| HTWD-PN-40X40-PVC-GY   | 40.0      | 40.0       | 4.0        | 6.0        | 40 m       | 184-10078   |
| HTWD-PN-40X60-PVC-GY   | 40.0      | 60.0       | 4.0        | 6.0        | 36 m       | 184-10148   |
| HTWD-PN-40X80-PVC-GY   | 40.0      | 80.0       | 4.0        | 6.0        | 32 m       | 184-10208   |
| HTWD-PN-40X100-PVC-GY  | 40.0      | 100.0      | 4.0        | 6.0        | 16 m       | 184-10258   |
| HTWD-PN-60X40-PVC-GY   | 60.0      | 40.0       | 4.0        | 6.0        | 24 m       | 184-10088   |
| HTWD-PN-60X60-PVC-GY   | 60.0      | 60.0       | 4.0        | 6.0        | 24 m       | 184-10158   |
| HTWD-PN-60X80-PVC-GY   | 60.0      | 80.0       | 4.0        | 6.0        | 24 m       | 184-10218   |
| HTWD-PN-60X100-PVC-GY  | 60.0      | 100.0      | 4.0        | 6.0        | 8 m        | 184-10268   |
| HTWD-PN-80X40-PVC-GY   | 80.0      | 40.0       | 4.0        | 6.0        | 24 m       | 184-10098   |
| HTWD-PN-80X60-PVC-GY   | 80.0      | 60.0       | 4.0        | 6.0        | 24 m       | 184-10168   |
| HTWD-PN-80X80-PVC-GY   | 80.0      | 80.0       | 4.0        | 6.0        | 24 m       | 184-10228   |
| HTWD-PN-80X100-PVC-GY  | 80.0      | 100.0      | 4.0        | 6.0        | 8 m        | 184-10329   |
| HTWD-PN-100X40-PVC-GY  | 100.0     | 40.0       | 4.0        | 6.0        | 16 m       | 184-10108   |
| HTWD-PN-100X60-PVC-GY  | 100.0     | 60.0       | 4.0        | 6.0        | 16 m       | 184-10178   |
| HTWD-PN-100X80-PVC-GY  | 100.0     | 80.0       | 4.0        | 6.0        | 16 m       | 184-10238   |
| HTWD-PN-100X100-PVC-GY | 100.0     | 100.0      | 4.0        | 6.0        | 8 m        | 184-10278   |
| HTWD-PN-120X60-PVC-GY  | 120.0     | 60.0       | 4.0        | 6.0        | 16 m       | 184-10188   |
| HTWD-PN-120X80-PVC-GY  | 120.0     | 80.0       | 4.0        | 6.0        | 16 m       | 184-10248   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



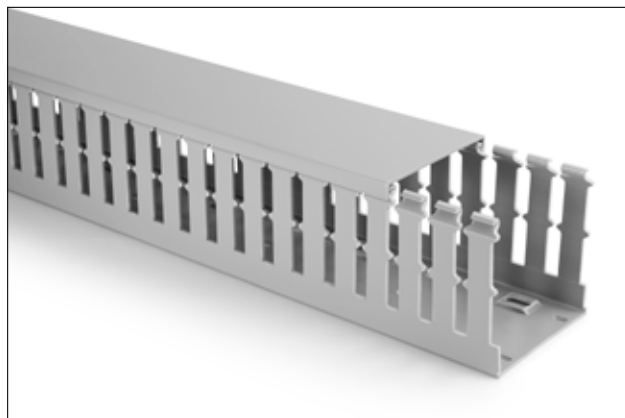
## Rigid PVC wiring ducts

### HelaDuct HTWD-PW for large-diameter wires (metric sizes)

HelaDuct HTWD-PW wiring ducts are used to route and protect wires in control panels and switching systems.

#### Features and benefits

- Wide slots suitable for large-diameter wires
- Wide fingers provide additional wire support
- Smooth, burr-free edges protect installers from injury and wires from damage
- Fingers can be removed with no sharp edges at pre-notched snap-off points
- Further pre-notched snap-off point at base of sidewall allow cutting out and removing sections of sidewall with no sharp edges
- Raised mounting points for easily, quickly and securely fastening wire retainers and other accessories prior to cabling
- Wire retainers and accessories leave no protruding parts below surface of duct
- Duct covers are easy to mount and remove, yet hold securely even in a vertical position and under vibration
- Cover is flush with side of duct, allowing for tight, contiguous placement of ducts
- Additional retainer nub on fingers on ducts height 80 and above to prevent cables from slipping
- Base perforation according to DIN EN 50085

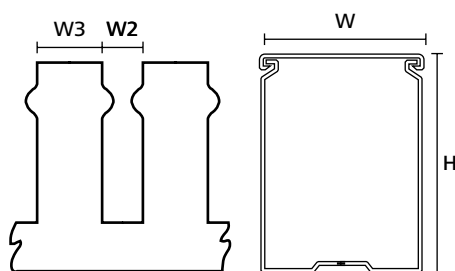
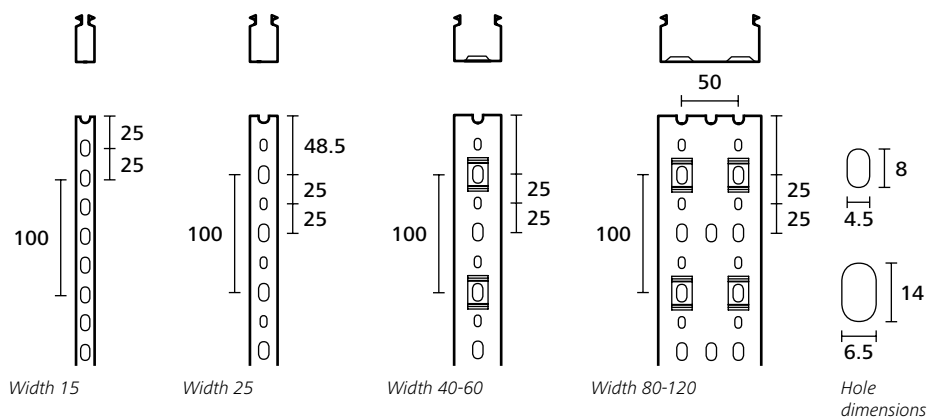


HelaDuct HTWD-PW - wide finger wiring duct.

|                              |                         |
|------------------------------|-------------------------|
| <b>MATERIAL</b>              | Polyvinylchloride (PVC) |
| <b>Length (L)</b>            | 2 m                     |
| <b>Operating Temperature</b> | -5 °C to +65 °C         |
| <b>Flammability</b>          | UL 94 V0                |

**RoHS** ✓

#### Base perforation according to DIN EN50085, HelaDuct wiring ducts HTWD-PN / PW



Wiring duct HTWD-PW/  
HTWD-PWB



## Rigid PVC wiring ducts

HelaDuct HTWD-PW for large-diameter wires (metric sizes)

| PART DESCRIPTION      | Width (W) | Height (H) | Width (W2) | Width (W3) | Pack Cont. | Article-No. |
|-----------------------|-----------|------------|------------|------------|------------|-------------|
| HTWD-PW-15X60-PVC-GY  | 15.0      | 60.0       | 5.0        | 7.5        | 32 m       | 181-10118   |
| HTWD-PW-25X40-PVC-GY  | 25.0      | 40.0       | 8.0        | 12.0       | 72 m       | 181-10068   |
| HTWD-PW-25X60-PVC-GY  | 25.0      | 60.0       | 8.0        | 12.0       | 48 m       | 181-10138   |
| HTWD-PW-25X80-PVC-GY  | 25.0      | 80.0       | 8.0        | 12.0       | 48 m       | 181-10198   |
| HTWD-PW-40X40-PVC-GY  | 40.0      | 40.0       | 8.0        | 12.0       | 40 m       | 181-10078   |
|                       | 40.0      | 40.0       | 8.0        | 12.0       | 40 m       | 181-10080   |
| HTWD-PW-40X60-PVC-GY  | 40.0      | 60.0       | 8.0        | 12.0       | 36 m       | 181-10148   |
| HTWD-PW-40X80-PVC-GY  | 40.0      | 80.0       | 8.0        | 12.0       | 32 m       | 181-10208   |
| HTWD-PW-40X100-PVC-GY | 40.0      | 100.0      | 8.0        | 12.0       | 16 m       | 181-10258   |
| HTWD-PW-60X40-PVC-GY  | 60.0      | 40.0       | 8.0        | 12.0       | 24 m       | 181-10088   |
| HTWD-PW-60X60-PVC-GY  | 60.0      | 60.0       | 8.0        | 12.0       | 24 m       | 181-10158   |
| HTWD-PW-60X80-PVC-GY  | 60.0      | 80.0       | 8.0        | 12.0       | 24 m       | 181-10218   |
| HTWD-PW-60X100-PVC-GY | 60.0      | 100.0      | 8.0        | 12.0       | 8 m        | 181-10268   |
| HTWD-PW-80X60-PVC-GY  | 80.0      | 60.0       | 8.0        | 12.0       | 24 m       | 181-10168   |
| HTWD-PW-80X80-PVC-GY  | 80.0      | 80.0       | 8.0        | 12.0       | 24 m       | 181-10228   |
| HTWD-PW-100X60-PVC-GY | 100.0     | 60.0       | 8.0        | 12.0       | 16 m       | 181-10178   |
| HTWD-PW-100X80-PVC-GY | 100.0     | 80.0       | 8.0        | 12.0       | 16 m       | 181-10238   |
| HTWD-PW-120X80-PVC-GY | 120.0     | 80.0       | 8.0        | 12.0       | 16 m       | 181-10248   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Rigid PVC wiring ducts

#### HelaDuct HTWD-PD (DIN-sizes)

HelaDuct HTWD-PD wiring ducts are used to route and protect wires in control panels and switching systems.

#### Features and benefits

- Narrow slots suitable for small-diameter wires
- Smooth, burr-free edges protect installers from injury and wires from damage
- Fingers can be removed with no sharp edges at pre-notched snap-off points
- Further pre-notched snap-off point at base of sidewall allow cutting out and removing sections of sidewall with no sharp edges
- Duct covers are easy to mount and remove, yet hold securely even in a vertical position and under vibration
- Cover is flush with side of duct, allowing for tight, contiguous placement of ducts
- Base perforation according to DIN EN 50085

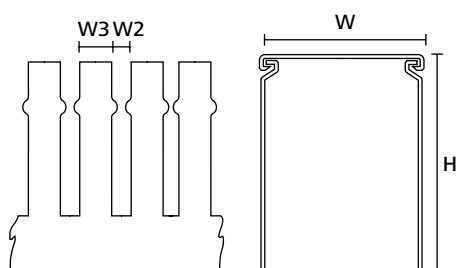
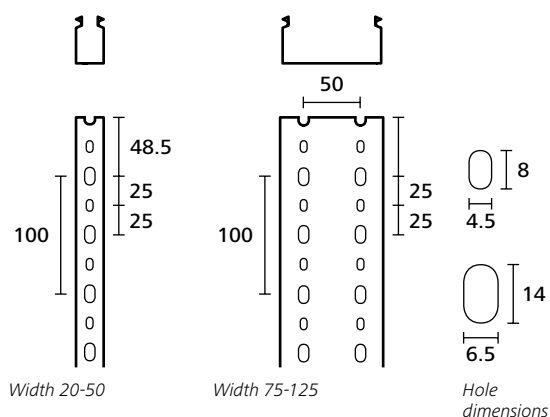


HelaDuct HTWD-PD - DIN sized wiring duct.

|                              |                         |
|------------------------------|-------------------------|
| <b>MATERIAL</b>              | Polyvinylchloride (PVC) |
| <b>Length (L)</b>            | 2 m                     |
| <b>Operating Temperature</b> | -5 °C to +60 °C         |
| <b>Flammability</b>          | UL 94 V0                |

RoHS

#### Base perforation according to DIN EN50085, HelaDuct wiring ducts HTWD-PD



Wiring duct HTWD-PD



### Rigid PVC wiring ducts

#### HelaDuct HTWD-PD (DIN-sizes)

| PART DESCRIPTION         | Width (W) | Height (H) | Width (W2) | Width (W3) | Pack Cont. | Article-No. |
|--------------------------|-----------|------------|------------|------------|------------|-------------|
| HTWD-PD-20X20-PVC-GY     | 20.0      | 20.0       | 4.0        | 6.0        | 64 m       | 185-42020   |
| HTWD-PD-20X37.5-PVC-GY   | 20.0      | 37.5       | 4.0        | 6.0        | 32 m       | 185-42037   |
| HTWD-PD-20X50-PVC-GY     | 20.0      | 50.0       | 4.0        | 6.0        | 20 m       | 185-42050   |
| HTWD-PD-25X25-PVC-GY     | 25.0      | 25.0       | 5.0        | 7.5        | 48 m       | 185-42525   |
| HTWD-PD-25X50-PVC-GY     | 25.0      | 50.0       | 5.0        | 7.5        | 18 m       | 185-42550   |
| HTWD-PD-25X75-PVC-GY     | 25.0      | 75.0       | 5.0        | 7.5        | 32 m       | 185-42575   |
| HTWD-PD-37.5X25-PVC-GY   | 37.5      | 25.0       | 5.0        | 7.5        | 64 m       | 185-43725   |
| HTWD-PD-37.5X37.5-PVC-GY | 37.5      | 37.5       | 5.0        | 7.5        | 32 m       | 185-43737   |
| HTWD-PD-37.5X50-PVC-GY   | 37.5      | 50.0       | 5.0        | 7.5        | 40 m       | 185-43750   |
| HTWD-PD-37.5X75-PVC-GY   | 37.5      | 75.0       | 5.0        | 7.5        | 40 m       | 185-43775   |
| HTWD-PD-50X50-PVC-GY     | 50.0      | 50.0       | 5.0        | 7.5        | 48 m       | 185-45050   |
| HTWD-PD-50X75-PVC-GY     | 50.0      | 75.0       | 5.0        | 7.5        | 20 m       | 185-45075   |
| HTWD-PD-50X100-PVC-GY    | 50.0      | 100.0      | 5.0        | 7.5        | 24 m       | 185-45010   |
| HTWD-PD-75X50-PVC-GY     | 75.0      | 50.0       | 5.0        | 7.5        | 20 m       | 185-47550   |
| HTWD-PD-75X75-PVC-GY     | 75.0      | 75.0       | 5.0        | 7.5        | 16 m       | 185-47575   |
| HTWD-PD-75X100-PVC-GY    | 75.0      | 100.0      | 5.0        | 7.5        | 16 m       | 185-47510   |
| HTWD-PD-100X50-PVC-GY    | 100.0     | 50.0       | 5.0        | 7.5        | 24 m       | 185-41050   |
| HTWD-PD-100X75-PVC-GY    | 100.0     | 75.0       | 5.0        | 7.5        | 16 m       | 185-41075   |
| HTWD-PD-100X100-PVC-GY   | 100.0     | 100.0      | 5.0        | 7.5        | 8 m        | 185-41010   |
| HTWD-PD-125X50-PVC-GY    | 125.0     | 50.0       | 5.0        | 7.5        | 18 m       | 185-41250   |
| HTWD-PD-125X75-PVC-GY    | 125.0     | 75.0       | 5.0        | 7.5        | 12 m       | 185-41275   |

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Halogen-free wiring ducts

#### HelaDuct HTWD-HF (metric sizes)

HelaDuct HTWD-HF wiring ducts are used to route and protect wires in control panels and switching systems where there are high demands on personal or material safety in case of fire, such as in public transport, tunnels, data-processing centers or public buildings.

#### Features and benefits

- Excellent fire-safety characteristics according to UL94 und EN 45545-2
- Narrow slots suitable for small-diameter wires
- Smooth, burr-free edges protect installers from injury and wires from damage
- Fingers can be removed with no sharp edges at pre-notched snap-off points
- Further pre-notched snap-off point at base of sidewall allow cutting out and removing sections of sidewall with no sharp edges
- Duct covers hold securely even in a vertical position and under vibration
- Cover is flush with side of duct, allowing for tight, contiguous placement of duct
- Base perforation according to DIN EN 50085



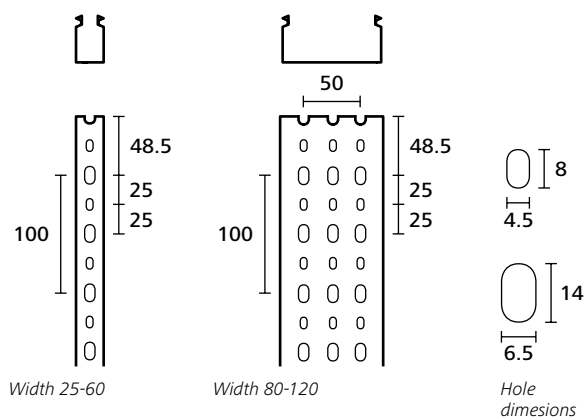
*HelaDuct HTWD-HF (metric), halogenfree wiring duct.*

|                                  |                                                                     |
|----------------------------------|---------------------------------------------------------------------|
| <b>MATERIAL</b>                  | Acrylonitrile Butadiene Styrene alloyed with Polycarbonate (PC/ABS) |
| <b>Length (L)</b>                | 2.0 m                                                               |
| <b>Operating Temperature</b>     | -25 °C to +90 °C                                                    |
| <b>Flammability</b>              | UL 94 V0                                                            |
| <b>EN 45545-2 Classification</b> | R22 HL2, R23 HL2                                                    |

HF ✓

RoHS ✓

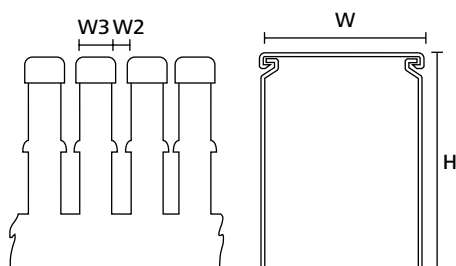
#### Base perforation according to DIN EN50085, HelaDuct wiring ducts HTWD-HF





### Halogen-free wiring ducts

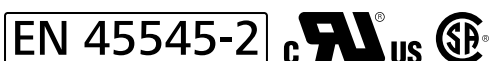
#### HelaDuct HTWD-HF (metric sizes)



HelaDuct Wiring ducts  
HTWD-HF

| PART DESCRIPTION          | Width (W) | Height (H) | Width (W2) | Width (W3) | Pack Cont. | Article-No. |
|---------------------------|-----------|------------|------------|------------|------------|-------------|
| HTWD-HF-25X25-PC/ABS-GY   | 25.0      | 25.0       | 6.0        | 6.5        | 50.0 m     | 183-22525   |
| HTWD-HF-25X40-PC/ABS-GY   | 25.0      | 40.0       | 6.0        | 6.5        | 48.0 m     | 183-22540   |
| HTWD-HF-25X60-PC/ABS-GY   | 25.0      | 60.0       | 6.0        | 6.5        | 60.0 m     | 183-25060   |
| HTWD-HF-25X80-PC/ABS-GY   | 25.0      | 80.0       | 6.0        | 6.5        | 20.0 m     | 183-22580   |
| HTWD-HF-40X25-PC/ABS-GY   | 40.0      | 25.0       | 6.0        | 6.5        | 48.0 m     | 183-24025   |
| HTWD-HF-40X40-PC/ABS-GY   | 40.0      | 40.0       | 6.0        | 6.5        | 50.0 m     | 183-24040   |
| HTWD-HF-40X60-PC/ABS-GY   | 40.0      | 60.0       | 6.0        | 6.5        | 40 m       | 183-24060   |
| HTWD-HF-40X80-PC/ABS-GY   | 40.0      | 80.0       | 6.0        | 6.5        | 20.0 m     | 183-24080   |
| HTWD-HF-60X40-PC/ABS-GY   | 60.0      | 40.0       | 6.0        | 6.5        | 40 m       | 183-26040   |
| HTWD-HF-60X60-PC/ABS-GY   | 60.0      | 60.0       | 6.0        | 6.5        | 24.0 m     | 183-26060   |
| HTWD-HF-60X80-PC/ABS-GY   | 60.0      | 80.0       | 6.0        | 6.5        | 20.0 m     | 183-26080   |
| HTWD-HF-60X100-PC/ABS-GY  | 60.0      | 100.0      | 6.0        | 6.5        | 12.0 m     | 183-26010   |
| HTWD-HF-80X40-PC/ABS-GY   | 80.0      | 40.0       | 6.0        | 6.5        | 20.0 m     | 183-28040   |
| HTWD-HF-80X60-PC/ABS-GY   | 80.0      | 60.0       | 6.0        | 6.5        | 20.0 m     | 183-28060   |
| HTWD-HF-80X80-PC/ABS-GY   | 80.0      | 80.0       | 6.0        | 6.5        | 12.0 m     | 183-28080   |
| HTWD-HF-80X100-PC/ABS-GY  | 80.0      | 100.0      | 6.0        | 6.5        | 10.0 m     | 183-28010   |
| HTWD-HF-100X40-PC/ABS-GY  | 100.0     | 40.0       | 6.0        | 6.5        | 20.0 m     | 183-22040   |
| HTWD-HF-100X60-PC/ABS-GY  | 100.0     | 60.0       | 6.0        | 6.5        | 16.0 m     | 183-21060   |
| HTWD-HF-100X80-PC/ABS-GY  | 100.0     | 80.0       | 6.0        | 6.5        | 12.0 m     | 183-21080   |
| HTWD-HF-100X100-PC/ABS-GY | 100.0     | 100.0      | 6.0        | 6.5        | 8.0 m      | 183-21010   |
| HTWD-HF-120X60-PC/ABS-GY  | 120.0     | 60.0       | 6.0        | 6.5        | 12.0 m     | 183-21260   |
| HTWD-HF-120X80-PC/ABS-GY  | 120.0     | 80.0       | 6.0        | 6.5        | 16.0 m     | 183-21280   |

All dimensions in mm. Subject to technical changes.



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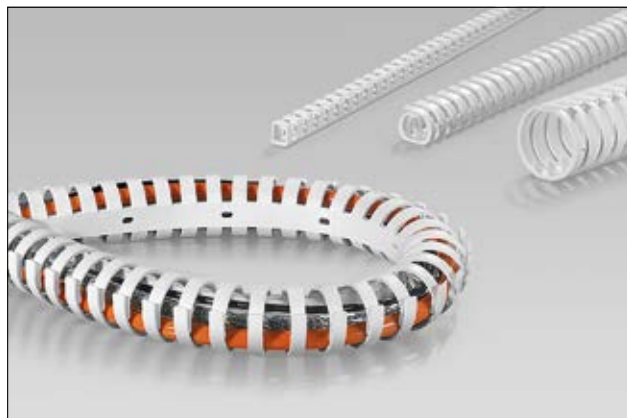
## Flexible cable support

### HelaDuct Flex

HelaDuct flexible cable supports are commonly used in switching cabinets. They are also used in the furniture industry, where cables need to be routed rapidly and attractively.

#### Features and benefits

- Space-saving wiring system
- Highly flexible, can be installed at angles of 90° and higher
- Cable clearly open to view
- Rapid mounting with screws or adhesive strip with high-quality foam bonding layer



HelaDuct Flex can be installed at angles above 90°.

|                              |                               |                                                 |
|------------------------------|-------------------------------|-------------------------------------------------|
| <b>MATERIAL</b>              | Polypropylene (PP)            |                                                 |
| <b>Operating Temperature</b> | -20 °C to +70 °C              |                                                 |
| <b>Fixation Method</b>       | Screw Mounting                | Screw Mounting and Adhesive                     |
| <b>Adhesive</b>              |                               | Synthetic rubber with base of polyethylene foam |
| <b>Flammability</b>          | UL 94 V0 (excluding adhesive) |                                                 |

HF ✓

RoHS ✓

| PART DESCRIPTION        | Nominal Ø | Fixation Method             | No. of Wires                           | No. of Wires                           | Length (L) | Pack Cont. | Article-No. |
|-------------------------|-----------|-----------------------------|----------------------------------------|----------------------------------------|------------|------------|-------------|
| HelaDuct Flex20-PP-WH   | 20        | Screw Mounting              | 22 x 1.50 <sup>2</sup> mm <sup>2</sup> | 14 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 70 pcs.    | 164-21008   |
| HelaDuct Flex20SK-PP-WH | 20        | Screw Mounting and Adhesive | 22 x 1.50 <sup>2</sup> mm <sup>2</sup> | 14 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 70 pcs.    | 164-21108   |
| HelaDuct Flex30-PP-WH   | 30        | Screw Mounting              | 50 x 1.50 <sup>2</sup> mm <sup>2</sup> | 34 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 40 pcs.    | 164-31008   |
| HelaDuct Flex30SK-PP-WH | 30        | Screw Mounting and Adhesive | 50 x 1.50 <sup>2</sup> mm <sup>2</sup> | 34 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 40 pcs.    | 164-31108   |
| HelaDuct Flex40-PP-WH   | 40        | Screw Mounting              | 81 x 2.50 <sup>2</sup> mm <sup>2</sup> | 60 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 24 pcs.    | 164-41008   |
| HelaDuct Flex40SK-PP-WH | 40        | Screw Mounting and Adhesive | 81 x 2.50 <sup>2</sup> mm <sup>2</sup> | 60 x 2.50 <sup>2</sup> mm <sup>2</sup> | 500.0      | 24 pcs.    | 164-41108   |

All dimensions in mm. Subject to technical changes.



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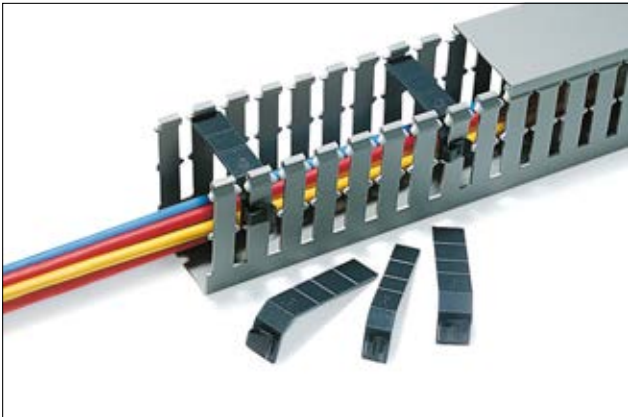
For mounting to duct fingers

HelaDuct HTWD-NFWR and HTWD-WFWR Wire Retainers

The Narrow Finger and Wide Finger Wire Retainers HTWD-NFWR and HTWD-WFWR are easily attached to HelaDuct wiring duct fingers to hold wires securely in place during installation and when the cover is removed.

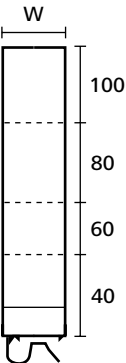
Features and benefits

- Prevents wires from falling out even when vertical routed
- Easily inserted onto single fingers of duct
- Height can be freely adjusted
- Does not block insertion of wirings into slots
- One retainer for all duct widths: length of retainer can be shortened at break-off points to duct width
- HTWD-NFWR is compatible with HelaDuct HTWD-PN and HTWD-HF (metric sizes)
- HTWD-WFWR is compatible with HelaDuct HTWD-PW ducts



HTWD-NFWR and HTWD-WFWR hold wires in place even when cover is removed.

|                       |                                       |
|-----------------------|---------------------------------------|
| MATERIAL              | Acrylonitrile Butadiene Styrene (ABS) |
| Operating Temperature | -40 °C to +80 °C                      |
| Flammability          | UL 94 HB                              |



HTWD-NFWR, -WFWR

| PART DESCRIPTION | For Wiring Ducts | Width (W) | Pack Cont. | Article-No. |
|------------------|------------------|-----------|------------|-------------|
| HTWD-NFWR-ABS-BK | HTWD-PN, HTWD-HF | 14.0      | 100 pcs.   | 181-10020   |
| HTWD-WFWR-ABS-BK | HTWD-PW          | 18.0      | 100 pcs.   | 181-10010   |

All dimensions in mm. Subject to technical changes.



## Edge protection

### EdgeGuard

EdgeGuard is used to cover panel edging to prevent chafing and provide an attractive finish.

#### Features and benefits

- Very flexible
- Easy to apply
- Protects cables from chafing on bulkheads



EdgeGuard protection against sharp panel edges.

|                              |                                         |
|------------------------------|-----------------------------------------|
| <b>MATERIAL</b>              | Polyvinylchloride (PVC)                 |
| <b>Operating Temperature</b> | -65 °C to +105 °C, intermittent +135 °C |
| <b>Flammability</b>          | UL 94 HB                                |



| PART DESCRIPTION | Width (W) | Width (W2) | Width (W3) | Width (W4) | Height (H) | Height (H2) | Pack Cont. | Article-No. |
|------------------|-----------|------------|------------|------------|------------|-------------|------------|-------------|
| PS1-PVC-BK       | 1.2       | 0.6        | -          | -          | 5.0        | 3.2         | 75 m       | 800-00200   |
| SM1-PVC-BK       | 5.0       | 1.0        | 1.8        | 4.2        | 6.3        | 4.9         | 75 m       | 800-00004   |
| RA1-PVC-BK       | 6.4       | 2.4        | -          | -          | 7.1        | 5.6         | 75 m       | 800-00001   |

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



Edge protection for cut-out sections

Flexiform G51N PA6 grommet strip

Flexiform grommet strips are used to protect cables and wires routed through sharp-edged cutout sections.

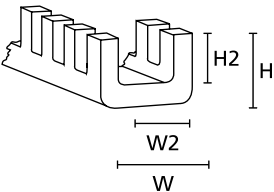
Features and benefits

- Very flexible
- Easily and securely applied without adhesives
- Very high abrasion resistance
- Close-fitting rail for effective, orderly-looking protection
- Flexiform G51N made of PA6 offers very good abrasion resistance



Optimal protection of cables and wires at panel edges.

|                       |                   |
|-----------------------|-------------------|
| MATERIAL              | Polyamide 6 (PA6) |
| Operating Temperature | -60 °C to +95 °C  |
| Flammability          | UL 94 HB          |



Flexiform edge protection

| PART DESCRIPTION | Panel Thickness | Width (W) | Width (W2) | Height (H) | Height (H2) | Pack Cont. | Article-No. |
|------------------|-----------------|-----------|------------|------------|-------------|------------|-------------|
| G51NB-PA6-NA     | 1.3 - 2.1       | 4.6       | 2.4        | 4.3        | 2.7         | 25 m       | 251-21209   |

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## For punched or drilled metal sheets

### Edge protection grommets

Edge protection grommets are used wherever cable and wires are routed through apertures. HellermannTyton grommets offer excellent mechanical protection.

### Features and benefits

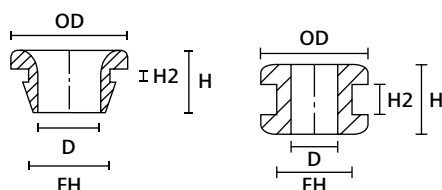
- Protects cables from sharp edges
- Provides additional strain relief
- Flexible and easy to apply
- High resistance to chemicals and environmental influences



Edge protection grommets.

|                              |                         |                                             |
|------------------------------|-------------------------|---------------------------------------------|
| <b>MATERIAL</b>              | Polyvinylchloride (PVC) | Polyvinylchloride, flame retardant (PVC-FR) |
| <b>Operating Temperature</b> | -30 °C to +60 °C        |                                             |
| <b>Shore Hardness A</b>      | 70±5                    | 55±5                                        |
| <b>Flammability</b>          | UL 94 HB                | UL 94 V0                                    |

**RoHS** ✓



HV1502

HV1201 - HV1218

| PART DESCRIPTION  | Drawing | Bundle Ø max. | Outside Ø (OD) | Hole Ø (FH) | Ø (D) | Height (H) | Height (H2) | Variant | Pack Cont. | Article-No. |
|-------------------|---------|---------------|----------------|-------------|-------|------------|-------------|---------|------------|-------------|
| HV1101-PVC-FR-BK  |         | 25.5          | 25.5           | 19.0        | 12.0  | 10.0       | 1.6         | Round   | 500 pcs.   | 633-01010   |
| HV1212-PVC-FR-BK  |         | 9.0           | 9.0            | 6.0         | 4.0   | 7.0        | 1.0         | Round   | 2000 pcs.  | 633-02120   |
| HV1201-PVC-FR-BK  |         | 9.5           | 9.5            | 6.4         | 4.0   | 5.6        | 1.6         | Round   | 2000 pcs.  | 633-02010   |
| HV1215-PVC-FR-BK  |         | 10.0          | 10.0           | 8.0         | 6.0   | 5.0        | 1.0         | Round   | 2000 pcs.  | 633-02150   |
| HV1209-PVC-FR-BK  |         | 11.0          | 11.0           | 9.0         | 4.0   | 5.5        | 1.5         | Round   | 1000 pcs.  | 633-02090   |
| HV1208-PVC-FR-BK  |         | 14.0          | 14.0           | 9.5         | 8.0   | 8.0        | 1.5         | Round   | 1000 pcs.  | 633-02080   |
| HV1207-PVC-FR-BK  |         | 14.0          | 14.0           | 10.0        | 6.0   | 6.4        | 1.5         | Round   | 1000 pcs.  | 633-02070   |
| HV1204-PVC-FR-BK  |         | 17.5          | 17.5           | 12.0        | 10.0  | 8.8        | 4.0         | Round   | 1000 pcs.  | 633-02040   |
| HV1205-PVC-FR-BK  |         | 17.5          | 17.5           | 13.5        | 10.0  | 8.7        | 4.0         | Round   | 1000 pcs.  | 633-02050   |
| HV1201B-PVC-FR-BK |         | -             | 9.5            | 6.4         | 4.0   | 6.5        | 2.5         | Round   | 2000 pcs.  | 633-02020   |
| HV1218-PVC-FR-BK  |         | -             | 14.0           | 10.0        | 6.0   | 9.0        | 4.0         | Round   | 1000 pcs.  | 633-02180   |
| HV1216-PVC-FR-BK  |         | -             | 14.5           | 8.0         | 5.0   | 6.5        | 1.5         | Round   | 2000 pcs.  | 633-02160   |
| HV1210-PVC-FR-BK  |         | -             | 15.0           | 9.0         | 6.0   | 10.5       | 2.0         | Round   | 1000 pcs.  | 633-02100   |
| HV1203-PVC-FR-BK  |         | -             | 17.5           | 12.0        | 10.0  | 6.8        | 2.0         | Round   | 1000 pcs.  | 633-02030   |
| HV1206-PVC-FR-BK  |         | -             | 17.5           | 12.0        | 10.0  | 10.8       | 6.0         | Round   | 1000 pcs.  | 633-02060   |

All dimensions in mm. Subject to technical changes.



## For punched or drilled metal sheets

## Edge protection grommets

| PART DESCRIPTION | Drawing | Bundle Ø max. | Outside Ø (OD) | Hole Ø (FH) | Ø (D) | Height (H) | Height (H2) | Variant | Pack Cont. | Article-No. |
|------------------|---------|---------------|----------------|-------------|-------|------------|-------------|---------|------------|-------------|
| HV1301-PVC-FR-BK |         | 15.9          | 15.9           | 11.0        | 8.0   | 7.0        | 1.0         | Round   | 1000 pcs.  | 633-03010   |
| HV1303-PVC-FR-BK |         | 15.9          | 15.9           | 11.0        | 8.0   | 6.4        | 1.6         | Round   | 1000 pcs.  | 633-03030   |
| HV1302-PVC-FR-BK |         | -             | 15.9           | 11.0        | 8.0   | 9.0        | 3.0         | Round   | 1000 pcs.  | 633-03020   |
| HV1304-PVC-FR-BK |         | -             | 15.9           | 11.0        | 8.0   | 10.8       | 6.0         | Round   | 1000 pcs.  | 633-03040   |
| HV1305-PVC-FR-BK |         | -             | 24.0           | 18.0        | 14.0  | 7.0        | 3.0         | Round   | 500 pcs.   | 633-03050   |
| HV1305-PVC-FR-WH |         | -             | 24.0           | 18.0        | 14.0  | 7.0        | 3.0         | Round   | 500 pcs.   | 633-03059   |
| HV1401-PVC-FR-BK |         | -             | 15.9           | 9.5         | 5.0   | 4.8        | 0.8         | Round   | 1000 pcs.  | 633-04010   |
| HV1402-PVC-FR-BK |         | -             | 23.0           | 18.5        | 6.0   | 7.0        | 2.0         | Round   | 1000 pcs.  | 633-04020   |
| HV1502-PVC-BK    |         | -             | 11.5           | 8.0         | 6.5   | 8.0        | 1.5         | Round   | 2000 pcs.  | 633-05020   |
| HV1606-PVC-FR-GY |         | -             | 31.0           | 25.0        | 17.0  | 11.0       | 3.0         | Oval    | 500 pcs.   | 633-06068   |
| HV1607-PVC-FR-GY |         | -             | 43.0           | 37.0        | 29.0  | 11.0       | 3.0         | Oval    | 250 pcs.   | 633-06078   |
| HV1608-PVC-FR-GY |         | -             | 58.0           | 52.0        | 44.0  | 11.0       | 3.0         | Oval    | 250 pcs.   | 633-06088   |

All dimensions in mm. Subject to technical changes.