

# Specialty Convuluted Tubing



## OVAL TUBING

OVAL TUBING is a convoluted tube extruded in an oval shape specially designed to protect and route electrical cables in vehicles.

The oval shape design keeps the wire bundle in a flat position, ideal for confined spaces.

OVAL TUBING can be made of two combined sections: flexible (convoluted) and straight (rigid).

This option makes OVAL TUBING a **100% customized product**: straight and flexible sections are combined depending on the routing needs.

The choice can also consider the local position of fasteners.

It can be delivered slit or non-slit to fit to specific applications.

## Application



OVAL TUBING is well suited to underbody applications and door panel harnesses where cables need to be maintained flat in confined spaces.

## Oval Tubing



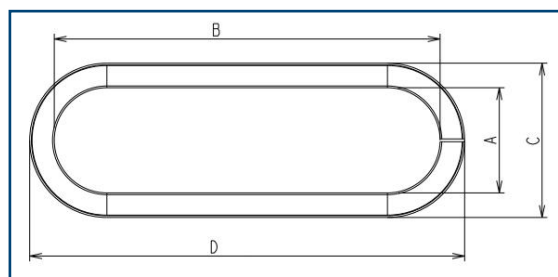
### Characteristics

- **Colors:** standard colors are black and orange, for high voltage cable identification.
- **Material:** A polypropylene material can also be proposed in a UL94 V-0 grade upon request, following validation steps.

| Physical properties                    | Spec.   | Unit              | Standard polyethylene | Standard polypropylene | High heat polypropylene | Heat stabilized polyamide |
|--|---|-------------------|-----------------------|------------------------|-------------------------|---------------------------|
| <b>Thermal properties</b>              |   |                   |                       |                        |                         |                           |
| Continuous temperature of use (3000h)* | -   | °C (°F)           | -40/85 (-40/185)      | -40/105 (-40/221)      | -40/125 (-40/257)       | -40/125 (-40/257)         |
| Peak temperature                       | -   | °C (°F)           | 168h at 115 (239)     | 240h at 125 (257)      | 240h at 150 (302)       | 168h at 150 (302)         |
| <b>Mechanical properties</b>           |   |                   |                       |                        |                         |                           |
| Tensile strength at yield              | -   | MPa               | 15 (ASTM D792)        | 27 (ASTM D638)         | 23 (ASTM D638)          | 38 (ISO 527)              |
| Tensile strength at break              | ASTM D638   | MPa               | -                     | -                      | 21                      | -                         |
| Elongation at yield                    | ASTM D638   | %                 | -                     | 11                     | 9                       | -                         |
| Elongation at break                    | -   | %                 | >450 (ASTM D638)      | -                      | >600 (ASTM D638)        | 195 (ISO 527)             |
| <b>Other properties</b>                |   |                   |                       |                        |                         |                           |
| Density                                | ASTM D792   | g/cm <sup>3</sup> | 0.94                  | 0.9                    | 0.95 - 1.03             | 1.06 - 1.08 (ISO 527)     |
| Flammability                           | FMVSS 302<br>UL94   | mm/min<br>-       | -<br>HB               | <100<br>HB             | < 75 (ISO 3795)<br>HB   | <100<br>HB                |
| Chemical resistance                    | Resists the majority of chemicals and automotive fluids (oils, coolant, battery liquid, brake fluid, fuels, windshield washer...) |                   |                       |                        |                         |                           |

\*For 150°C continuous temperature of use, other material grades can be proposed upon request.

### Dimensions



The following sizes are standard diameters.  
Other dimensions can be proposed upon request.  
**Note:** some diameters may not be compatible with the requested material.

| Designation          | ID (mm) |      | OD (mm) |      |
|----------------------|---------|------|---------|------|
|                      | A       | B    | C       | D    |
| OVAL TUBING 06x21    | 6.5     | 21.5 | 9.6     | 24.6 |
| OVAL TUBING 10x25    | 10      | 25   | 14.6    | 29.6 |
| OVAL TUBING 12x35    | 12      | 35   | 18.3    | 41.3 |
| OVAL TUBING 15x55 NW | 14.4    | 54.3 | 22      | 61.9 |

### Approvals

Specific to applications.

### Packaging

OVAL TUBING is delivered in cut lengths from 100 to 1,200 mm (other lengths upon request only).

Data and photos for information only. Delfingen makes no warranties as to the accuracy or completeness of this information. Delfingen reserves the right to make changes in materials or processing without notification.

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