

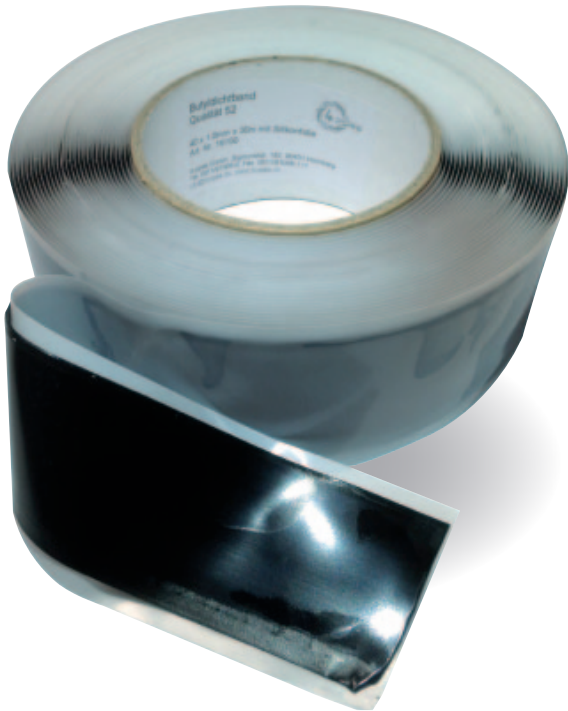


Pipeline Accessories



**Heat Shrink Products
and Adhesives 4 pipes**

4 pipes butyl rubber adhesive tape quality 52 self-amalgamating



Properties

- self-amalgamating
- high resistance to thermal distortion
- good ageing-resistance

Applications

- Sealing tape for preinsulated pipe joints and shrinkable endcaps
- Sealing tape for endseals

Handling

Processing by hand at least 5 °C

Surfaces have to be clean, dust-free, and dry and must show bearing strength.

Attention: Roughen the surface and preheat it to min. 40°C for a proper bond
Peel resistance at 23°C: 30-35N/10mm
On porous surfaces a butyle primer is recommended.

Dimensions

Strings 1 x 40mm, 1 x 50mm and 1,5 x 100mm
spezial profiles possible

Comments

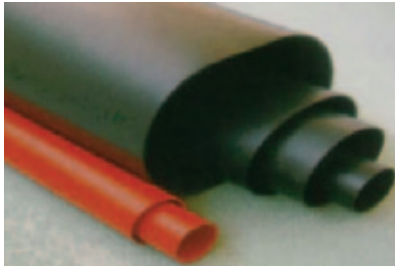
Safety Avoid skin and eye contact.
Further information see safety data sheet.
No danger notes necessary.
Risk of burning at high application temperatures.

Disposal As domestic- or hazardous waste under observance of local official regulations.

| Technical data | |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Base thermoplastic | butyle rubber |
| Colour | black |
| Density | 1,5 (g/cm ³) - DIN 53479 B |
| Solids concentration | 25 (1/10 mm) - DIN 51580 (5) |
| Thermal distortion | 0 (mm) - IPM 5010 |
| Solid content | > 99 (%) - IPM 5003 |
| Ageing resistance | very good, unless exposed to UV light |
| Temperature resistance | -40 °C to + 90 °C, no shrinking, drying-out or embrittlement A short-term high temperature, e.g. installation of shrinking sleeves does not affect the tape negatively |
| Storage time | 24 months |
| Storage | in original carton 10 °C up to 25 °C |



Heat shrink sleeve 4PMS and 4PMSA 4 pipes



Product description 4PMS and 4PMSA

Medium wall Polyolefin tubular **Heat shrinkable sleeve** with excellent mechanical and electrical properties. Made for various applications, for low voltage electrical cable isolation or mechanical protection on pipes or pipe ends. Ideal as a **sealing system** and **corrosion protection system**, especially where low shrink temperatures, easy application and high flexibility are required.

- Type 4PMSA = with adhesive
- Type 4PMS = without adhesive
- medium wall thickness
- Shrink ratio: 3:1
- climate and weather proof
- Standard colour black
- max. temperature +110°C
- minimum Shrink temperature: 120°C
- moisture tight isolation
- high mechanical protection

Under 4PMS an additional, separate butyl adhesive can be applied. Butyl adhesive Quality 22 with PP mesh inlay 50 x 1 mm x 15 m. **4 pipes Art. No.** 16169

Application with a soft propane flame on a clean, dry and fat free surface.



Technical data 4PMS and 4PMSA

| Test | Result |
|-------------------------------------|-----------------------|
| Operating temperature IEC 216 | -55°C to +110°C |
| Tear resistance ASTM D 638 | >14 MPa |
| Elongation at break ASTM D 638 | >400% |
| Density ASTM D 792 | 1.05g/cm ³ |
| Change in length UL 224 | 0 bis up to 10% |
| Concentricity ASTM D 2761 | <30% |
| Electrical resistance IEC 243 | >20KV/mm |
| Copper-resistance ASTM D 2671 | non corrosive |
| Water absorption ISO 62 | <0.15% |
| Resistance to fungal attack ISO 846 | passed |
| Peel resistance (PE) DIN 30672* | 4 N/cm (4PMSA) |

*without adhesive - Type 4PMS

| Type | Diameter as supplied min. | Diameter fully shrunk max. | Wall thickness max. | standard length* | Art. No. 4PMS | Art. No. 4PMSA |
|---------|---------------------------|----------------------------|---------------------|------------------|---------------|----------------|
| | mm | mm | mm | | | |
| 95/25 | 95 | 25 | 3,0 | 1000 | 15531 | 15504 |
| 115/34 | 115 | 34 | 3,0 | 1000 | 15532 | 15505 |
| 140/42 | 140 | 42 | 3,0 | 1000 | 15533 | 15506 |
| 160/50 | 160 | 50 | 2,9 | 1000 | 15534 | 15507 |
| 180/60 | 180 | 60 | 2,9 | 1000 | 15536 | 15511 |
| 235/65 | 235 | 65 | 2,9 | 1000 | 15538 | 15508 |
| 265/65 | 265 | 65 | 3,0 | 1000 | 15539 | 15509 |
| 300/90 | 300 | 90 | 2,8 | 1000 | 15540 | 15510 |
| 350/150 | 350 | 150 | 2,8 | 1000 | 15541 | on request |
| 400/150 | 400 | 150 | 4,0 | 1000 | 15543 | on request |

Further colours, lengths and dimensions on request



Sealing adhesive quality 22 4 pipes Special butyle tape with PP mesh inlay



Product information
Sealing adhesive Q22 4 pipes is a high performance sealing and corrosion protection tape, which is sticking double sided. The integrated PP-mesh gives high cohesive stability to the system and avoids unwanted overstretch during the easy application process.

Even at higher temperatures, the special butyle gets softer, but does not flow or melt. The material keeps its function when there are no additional mechanical stresses.

As sealing- and corrosion protection tape, under heat-shrinkable joints on preinsulated pipes as well as a separate adhesive under various shrinksleeves, the tape has high performance for various applications in the pipeline and cable industry. Sealing adhesive Q22 is self amalgamating and to be used with-out primer on metal and prepared plastic surfaces. High adhesion and flexibility as well as the special temperature resistance are the significant properties of the system.

Application

Surfaces must be clean, dry, stable and fat resp. grease free.

Attention: For a perfect adhesion, the pipe-cable-surfaces need to be roughend with sand paper and preheated up to 40°C minimum. On porous surfaces (e.g. concrete) the bonding surface need to be prepared with 4 pipes butyle primer first.

| Technical data | |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inlay | PP-mesh reinforcement |
| Thickness mesh | approx. 0,1 mm |
| Colour special Butyle adhesive Q22 | black |
| Tear resistance | ≥ 70N/25mm, DIN EN 14410* |
| Elongation at break | approx. 15 %, DIN EN 14410* |
| Interleaf | foil siliconised |
| Adhesive basis | Butyle rubber |
| Aging resistance | very good, when not exposed to direct sunlight and weather |
| Not resistant against | oils and liquidizers like e.g. benzin |
| Peel resistance | ≥ 15N/25mm, IPM 5009** |
| Stickiness | very high |
| Temperature range | -30°C to +120°C, No shrink, no dry out, no cracking. The short term exposure to higher temperatures, e.g. during the deventilation process of district heating pipelines, has no influence on the long term function. |
| Stock | in original carton at +10°C to max. +25°C |

* in accordance to the relevant DIN

** at 100mm/min, 90° tear angle

Dimensions

roll 1,0 x 100 mm x 15 m Art. No. 16170

roll 1,0 x 50 mm x 15 m Art. No. 16169

roll 0,6 x 50 mm x 30 m Art. No. 16171

Other length and width on request for example :

roll 1,5 x 100 mm





TEST CERTIFICATE

489 1208 109bA

Tests according to EN 489:2003

for

non-welded joint system for district heating pre-insulated pipeline systems type

**„Non-crosslinked shrinkable joint according to EN489 with
4pipes sealing tape quality 52“**

by order of

4pipes GmbH

Test sample No. 3553, 3554, 3576:

Joint type

„Isojoint with 4pipes sealing tape quality 52“

on 2x DN 80/160 and 1x DN 150/250

Test report 1081E5034

The following tests have been completed in accordance with the European Standard
EN 489:2003 at the FFI for three non-welded joints in August 2012:

Soil stress tests and water impermeability tests.

The joints have passed the tests successfully and without damage.

Hemmingen, 2012-08-15



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