



NORRES INDUSTRIAL HOSES AUTOMOTIVE INDUSTRY



Industrial robot, robotic, welding equipment, welding robot,
welding gun: Welding spot resistant hose, hose for dresspack for
media as water and air

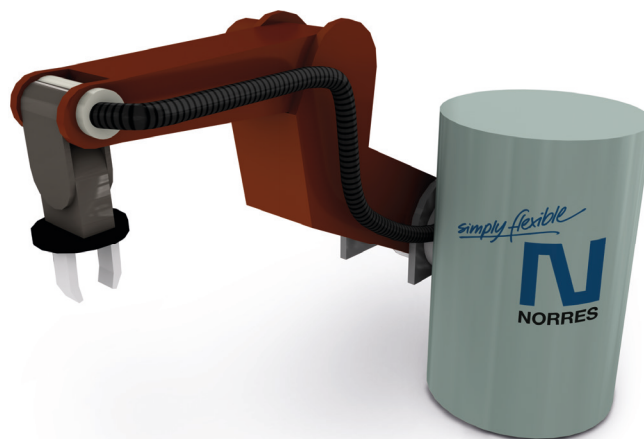
Recommended by NORRES customers:

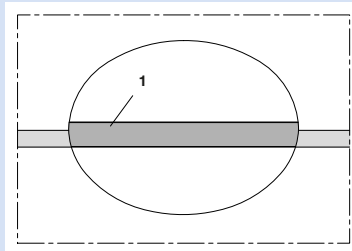
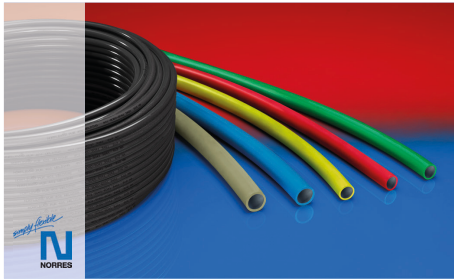
NORFLEX® PUR 441 ROBOTIC



Proven Alternatives:

NORFLEX® PUR 401 WELDING





Flame-retardant polyurethane hose/ tubing, for flying sparks or welding sparks

Applications

- flexible hose/ ducting for liquids and for gases and for abrasive solids
- hose/ tubing pump
- pneumatic tube
- compressed air hose, cooling water hose, water hose
- industrial robot, robotic, welding equipment, welding robot, welding gun: welding spot resistant hose, hose for dresspack for media as water and air
- heating hose: interior hose for media transfer

Properties

- very good resistance to flying sparks and welding sparks

- highly flexible
- highly abrasion resistant
- crush resistant
- good resistance to oil, gasoline and chemicals
- flame-retardant according to: UL94-V0/V2
- conforms to RoHS guideline

Temperature Range

- 20°C to 60°C

Design, Material

NORFLEX® design

- wall interior and exterior smooth; wall: special premium polyurethane with flame retardant additive (Pre-PUR®)

Delivery variants

- further diameters and lengths available on request
- cream (standard)
- grey (standard)
- black (standard)
- blue (standard)
- red (standard)
- yellow (standard)
- green (standard)
- special colours: partially coloured, completely coloured
- customer-specific branding

| I.D. | Wall Thickness | O.D. | Over-pressure | Burst Pressure | Bending Radius | Weight | Production Lengths | Order No. |
|---------------------|----------------|------|---------------|----------------|----------------|--------|--------------------|---------------|
| in / mm | mm | mm | bar | bar | mm | kg/m | m | |
| Colour blue | | | | | | | | |
| - / 2 | 1,0 | 4,0 | 25,000 | 40 | 6 | 0,012 | 100 | 401-9020-6051 |
| - / 4 | 1,0 | 6,0 | 18,000 | 35 | 10 | 0,020 | 100 | 401-9040-6051 |
| - / 4 | 2,0 | 8,0 | 23,000 | 47 | 13 | 0,048 | 50 100 | 401-9040-6041 |
| - / 5,5 | 1,25 | 8,0 | 14,000 | 28 | 14 | 0,034 | 100 | 401-9055-6061 |
| 1/4 / 6 | 1,5 | 9,0 | 14,000 | 28 | 15 | 0,045 | 100 | 401-9060-6071 |
| 1/4 / 6 | 2,0 | 10,0 | 18,000 | 36 | 17 | 0,063 | 50 100 | 401-9060-6041 |
| - / 7 | 1,5 | 10,0 | 12,000 | 25 | 22 | 0,051 | 100 | 401-9070-6071 |
| 5/16 / 8 | 2,0 | 12,0 | 13,000 | 30 | 24 | 0,078 | 50 100 | 401-9080-6041 |
| 3/8 / 10 | 1,0 | 12,0 | 8,000 | 20 | 35 | 0,044 | 50 100 | 401-9100-6051 |
| 3/8 / 10 | 2,0 | 14,0 | 12,000 | 32 | 45 | 0,096 | 50 100 | 401-9100-6041 |
| 3/8 / 10 | 2,5 | 15,0 | 18,000 | 35 | 50 | 0,125 | 50 100 | 401-9100-6081 |
| - / 11 | 2,0 | 15,0 | 13,000 | 30 | 45 | 0,107 | 100 | 401-9110-6041 |
| - / 11 | 2,5 | 16,0 | 14,000 | 34 | 50 | 0,135 | 50 | 401-9110-6081 |
| - / 17 | 2,5 | 22,0 | 8,000 | 20 | 72 | 0,195 | 50 | 401-9170-6081 |
| 7/8 / 22 | 3,0 | 28,0 | 7,000 | 18 | 139 | 0,300 | 50 | 401-9220-6091 |
| Colour cream | | | | | | | | |
| - / 2 | 1,0 | 4,0 | 25,000 | 40 | 6 | 0,012 | 100 | 401-9020-6056 |
| - / 4 | 1,0 | 6,0 | 18,000 | 35 | 10 | 0,020 | 100 | 401-9040-6056 |
| - / 4 | 2,0 | 8,0 | 23,000 | 47 | 13 | 0,048 | 50 100 | 401-9040-6046 |
| - / 5,5 | 1,3 | 8,0 | 14,000 | 28 | 14 | 0,034 | 100 | 401-9055-6066 |
| 1/4 / 6 | 1,5 | 9,0 | 14,000 | 28 | 15 | 0,045 | 100 | 401-9060-6076 |
| 1/4 / 6 | 2,0 | 10,0 | 18,000 | 36 | 17 | 0,063 | 50 100 | 401-9060-6046 |
| - / 7 | 1,5 | 10,0 | 12,000 | 25 | 22 | 0,051 | 100 | 401-9070-6076 |
| 5/16 / 8 | 2,0 | 12,0 | 13,000 | 30 | 24 | 0,078 | 50 100 | 401-9080-6046 |
| 3/8 / 10 | 1,0 | 12,0 | 8,000 | 20 | 35 | 0,044 | 100 | 401-9100-6056 |

Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. Additional technical data at www.norres.com. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data.



| I.D. | Wall Thickness | O.D. | Over-pressure | Burst Pressure | Bending Radius | Weight | Production Lengths | Order No. |
|----------|----------------|------|---------------|----------------|----------------|--------|--------------------|---------------|
| in / mm | mm | mm | bar | bar | mm | kg/m | m | |
| 3/8 / 10 | 2,0 | 14,0 | 12,000 | 32 | 45 | 0,096 | 50 100 | 401-9100-6046 |
| 3/8 / 10 | 2,5 | 15,0 | 18,000 | 35 | 50 | 0,125 | 100 | 401-9100-6086 |
| - / 11 | 2,0 | 15,0 | 13,000 | 30 | 45 | 0,107 | 100 | 401-9110-6046 |
| - / 11 | 2,5 | 16,0 | 14,000 | 34 | 50 | 0,135 | 50 | 401-9110-6086 |
| - / 17 | 2,5 | 22,0 | 8,000 | 20 | 72 | 0,195 | 50 | 401-9170-6086 |
| 7/8 / 22 | 3,0 | 28,0 | 7,000 | 18 | 139 | 0,300 | 50 | 401-9220-6096 |

Colour yellow

| | | | | | | | | |
|----------|-----|------|--------|----|-----|-------|--------|---------------|
| - / 2 | 1,0 | 4,0 | 25,000 | 40 | 6 | 0,012 | 100 | 401-9020-6054 |
| - / 4 | 1,0 | 6,0 | 18,000 | 35 | 10 | 0,020 | 100 | 401-9040-6054 |
| - / 4 | 2,0 | 8,0 | 23,000 | 47 | 13 | 0,048 | 50 100 | 401-9040-6044 |
| - / 5,5 | 1,3 | 8,0 | 14,000 | 28 | 14 | 0,034 | 100 | 401-9055-6064 |
| 1/4 / 6 | 1,5 | 9,0 | 14,000 | 28 | 15 | 0,045 | 100 | 401-9060-6074 |
| 1/4 / 6 | 2,0 | 10,0 | 18,000 | 36 | 17 | 0,063 | 50 100 | 401-9060-6044 |
| - / 7 | 1,5 | 10,0 | 12,000 | 25 | 22 | 0,051 | 100 | 401-9070-6074 |
| 5/16 / 8 | 2,0 | 12,0 | 13,000 | 30 | 24 | 0,078 | 50 100 | 401-9080-6044 |
| 3/8 / 10 | 1,0 | 12,0 | 8,000 | 20 | 35 | 0,044 | 50 100 | 401-9100-6054 |
| 3/8 / 10 | 2,0 | 14,0 | 12,000 | 32 | 45 | 0,096 | 100 | 401-9100-6044 |
| 3/8 / 10 | 2,5 | 15,0 | 18,000 | 35 | 50 | 0,125 | 100 | 401-9100-6084 |
| - / 11 | 2,0 | 15,0 | 13,000 | 30 | 45 | 0,107 | 100 | 401-9110-6044 |
| - / 11 | 2,5 | 16,0 | 14,000 | 34 | 50 | 0,135 | 50 | 401-9110-6084 |
| - / 17 | 2,5 | 22,0 | 8,000 | 20 | 72 | 0,195 | 50 | 401-9170-6084 |
| 7/8 / 22 | 3,0 | 28,0 | 7,000 | 18 | 139 | 0,300 | 50 | 401-9220-6094 |

Colour green

| | | | | | | | | |
|----------|-----|------|--------|----|-----|-------|--------|---------------|
| - / 2 | 1,0 | 4,0 | 25,000 | 40 | 6 | 0,012 | 100 | 401-9020-6055 |
| - / 4 | 1,0 | 6,0 | 18,000 | 35 | 10 | 0,020 | 100 | 401-9040-6055 |
| - / 4 | 2,0 | 8,0 | 23,000 | 47 | 13 | 0,048 | 50 100 | 401-9040-6045 |
| - / 5,5 | 1,3 | 8,0 | 14,000 | 28 | 14 | 0,034 | 100 | 401-9055-6065 |
| 1/4 / 6 | 1,5 | 9,0 | 14,000 | 28 | 15 | 0,045 | 100 | 401-9060-6075 |
| 1/4 / 6 | 2,0 | 10,0 | 18,000 | 36 | 17 | 0,063 | 50 100 | 401-9060-6045 |
| - / 7 | 1,5 | 10,0 | 12,000 | 25 | 22 | 0,051 | 100 | 401-9070-6075 |
| 5/16 / 8 | 2,0 | 12,0 | 13,000 | 30 | 24 | 0,078 | 50 100 | 401-9080-6045 |
| 3/8 / 10 | 1,0 | 12,0 | 8,000 | 20 | 35 | 0,044 | 100 | 401-9100-6055 |
| 3/8 / 10 | 2,0 | 14,0 | 12,000 | 32 | 45 | 0,096 | 50 100 | 401-9100-6045 |
| 3/8 / 10 | 2,5 | 15,0 | 18,000 | 35 | 50 | 0,125 | 100 | 401-9100-6085 |
| - / 11 | 2,0 | 15,0 | 13,000 | 30 | 45 | 0,107 | 100 | 401-9110-6045 |
| - / 11 | 2,5 | 16,0 | 14,000 | 34 | 50 | 0,135 | 50 | 401-9110-6085 |
| - / 17 | 2,5 | 22,0 | 8,000 | 20 | 72 | 0,195 | 50 | 401-9170-6085 |
| 7/8 / 22 | 3,0 | 28,0 | 7,000 | 18 | 139 | 0,300 | 50 | 401-9220-6095 |

Colour red

| | | | | | | | | |
|----------|-----|------|--------|----|----|-------|--------|---------------|
| - / 2 | 1,0 | 4,0 | 25,000 | 40 | 6 | 0,012 | 100 | 401-9020-6053 |
| - / 4 | 1,0 | 6,0 | 18,000 | 35 | 10 | 0,020 | 100 | 401-9040-6053 |
| - / 4 | 2,0 | 8,0 | 23,000 | 47 | 13 | 0,048 | 50 100 | 401-9040-6043 |
| - / 5,5 | 1,3 | 8,0 | 14,000 | 28 | 14 | 0,034 | 100 | 401-9055-6063 |
| 1/4 / 6 | 1,5 | 9,0 | 14,000 | 28 | 15 | 0,045 | 100 | 401-9060-6073 |
| 1/4 / 6 | 2,0 | 10,0 | 18,000 | 36 | 17 | 0,063 | 50 100 | 401-9060-6043 |
| - / 7 | 1,5 | 10,0 | 12,000 | 25 | 22 | 0,051 | 100 | 401-9070-6073 |
| 5/16 / 8 | 2,0 | 12,0 | 13,000 | 30 | 24 | 0,078 | 50 100 | 401-9080-6043 |
| 3/8 / 10 | 1,0 | 12,0 | 8,000 | 20 | 35 | 0,044 | 100 | 401-9100-6053 |

Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. Additional technical data at www.norres.com. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data.



| I.D. | Wall Thickness | O.D. | Over-pressure | Burst Pressure | Bending Radius | Weight | Production Lengths | Order No. |
|----------|----------------|------|---------------|----------------|----------------|--------|--------------------|---------------|
| in / mm | mm | mm | bar | bar | mm | kg/m | m | |
| 3/8 / 10 | 2,0 | 14,0 | 12,000 | 32 | 45 | 0,096 | 50 100 | 401-9100-6043 |
| 3/8 / 10 | 2,5 | 15,0 | 18,000 | 35 | 50 | 0,125 | 100 | 401-9100-6083 |
| - / 11 | 2,0 | 15,0 | 13,000 | 30 | 45 | 0,107 | 100 | 401-9110-6043 |
| - / 11 | 2,5 | 16,0 | 14,000 | 34 | 50 | 0,135 | 50 | 401-9110-6083 |
| - / 17 | 2,5 | 22,0 | 8,000 | 20 | 72 | 0,195 | 50 | 401-9170-6083 |
| 7/8 / 22 | 3,0 | 28,0 | 7,000 | 18 | 139 | 0,300 | 50 | 401-9220-6093 |

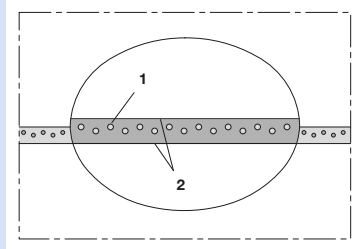
O.D. tolerance: ≤ 6 mm $+0,1 / -0,1$ mm; $6,1 \dots 16$ mm $+0,15 / -0,15$ mm; > 16 mm $+0,2 / -0,2$ mm; Wall thickness tolerance: 1 to 1,5 mm: $0 / -0,15$ mm; 2 mm: $0 / -0,2$ mm; 2,5 mm: $+0,15 / -0,05$ mm; 3 mm: $+0,2 / -0,1$ mm; Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data. Additional technical data at www.norres.com/en/technology/

Accessories



CLAMP 208

Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. Additional technical data at www.norres.com. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data.



Abrasion resistant polyurethane hose/
tubing for industrial robots, fabric reinforced
high pressure hose

Applications

- flexible hose/ ducting for liquids and for gases and for abrasive solids
- injection moulding tool cooling, cooling water supply
- agricultural industry: high pressure spraying hose e.g. for pesticides
- compressed air hose, cooling water hose, water hose
- fabric reinforced hose/ braided hose
- industrial robot, robotic, welding equipment, welding robot, welding gun: welding spot resistant hose, hose for dresspack for media as water and air
- heating hose: interior hose for media transfer

Properties

- fabric reinforced
- highly flexible
- highly abrasion resistant
- crush resistant
- good resistance to oil, gasoline and chemicals
- conforms to RoHS guideline

Temperature Range

- 35°C to 80°C

Design, Material

NORFLEX® design

1. fabric reinforced wall
2. smooth interior and exterior; wall: special premium polyurethane (Pre-PUR®)

Delivery variants

- further diameters and lengths available on request
- transparent (standard)
- grey (standard)
- black (standard)
- blue (standard)
- red (standard)
- yellow (standard)
- green (standard)
- special colours: full coloured
- customer-specific branding

| I.D. | O.D. | Over-pressure | min. Burst Pressure | Bending Radius | Weight | Dimensions in Stock | Further Production Lengths | Order No. |
|---------------------------|------|---------------|---------------------|----------------|--------|---------------------|----------------------------|---------------|
| in / mm | mm | bar | bar | mm | kg/m | m | m | |
| Colour transparent | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0005 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | - | 50 | 441-9094-0005 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | - | 50 | 441-9128-0005 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0005 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | - | 50 | 441-9190-0005 |
| Colour blue | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0400 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | 50 | - | 441-9094-0400 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | 50 | - | 441-9128-0400 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0400 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | 50 | - | 441-9190-0400 |
| Colour grey | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0401 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | - | 50 | 441-9094-0401 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | - | 50 | 441-9128-0401 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0401 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | - | 50 | 441-9190-0401 |
| Colour black | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0402 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | 50 | - | 441-9094-0402 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | 50 | - | 441-9128-0402 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0402 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | - | 50 | 441-9190-0402 |

Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. Additional technical data at www.norres.com. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data.



| I.D. | O.D. | Over-pressure | min. Burst Pressure | Bending Radius | Weight | Dimensions in Stock | Further Production Lengths | Order No. |
|----------------------|------|---------------|---------------------|----------------|--------|---------------------|----------------------------|---------------|
| in / mm | mm | bar | bar | mm | kg/m | m | m | |
| Colour red | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0403 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | 50 | - | 441-9094-0403 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | 50 | - | 441-9128-0403 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0403 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | 50 | - | 441-9190-0403 |
| Colour green | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0404 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | 50 | - | 441-9094-0404 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | 50 | - | 441-9128-0404 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0404 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | 50 | - | 441-9190-0404 |
| Colour yellow | | | | | | | | |
| 1/4 / 6,4 | 12,7 | 20,000 | 80 | 22 | 0,128 | - | 50 | 441-9064-0405 |
| 3/8 / 9,4 | 16,0 | 20,000 | 80 | 55 | 0,153 | - | 50 | 441-9094-0405 |
| 1/2 / 12,8 | 19,5 | 20,000 | 80 | 69 | 0,230 | - | 50 | 441-9128-0405 |
| 5/8 / 16 | 24,5 | 20,000 | 75 | 117 | 0,308 | - | 50 | 441-9160-0405 |
| 3/4 / 19,5 | 28,5 | 20,000 | 50 | 140 | 0,411 | - | 50 | 441-9190-0405 |

I.D. tolerance: < 13 mm +0,15 / -0,15 mm; > 13 mm +0,2 / -0,2 mm; O.D. tolerance: < 19,5 mm: +0,25 / -0,25 mm; > 19,5 mm: +0,25 / -0,25 mm; Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data. Additional technical data at www.norres.com/en/technology/

Accessories



CLAMP 208

Overpressure and underpressure are recommended threshold operating values, products can be subjected to higher loads upon request. The bending radius is measured through the inside of the hose arch. Additional technical data at www.norres.com. The right to make technical modifications is reserved. All values determined at 20°C and are approx. data.



● Manufacture, warehouse, distribution ● Warehouse, distribution



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