

## WEPSPLUS Welding Plug for Foaming Holes

Sealing systems for foam injection holes in thermally insulated PE jacket pipes & casings and in PEX casings.



### Product Description

WEPSPLUS insulated pipe foaming hole seal.

Construction: Multi-layer component composed of

- HDPE body
- Corrosion resistant metal mesh fusion element
- HDPE welding layer
- HDPE centering disc

WEPSPLUS is a watertight, mechanically robust plug used to seal foaming holes in standard or oversized as well as heat-shrinkable PE and PEX casings for thermally insulated pipes. WEPSPLUS is a very innovative product and is applied using an integrated, electrically activated welding system (electro-fusion closure plug).

For application of the WEPSPLUS, the welding area to which it is applied must be scraped so as to expose uncontaminated PE(X). WEPSPLUS is then placed over the foaming hole with the centering disc fitted within the hole. WEPSPLUS is installed by means of a clamping tool that makes electrical contact with the metal heating element. This tool provides the heat-activating, electrical current to the WEPSPLUS and bends the plug to the correct curvature of the pipe. When electrically activated the metal mesh heats the welding layer above the melt temperature, a fusion bond between WEPSPLUS and the PE(X) casing forms. This bond seals off the foaming hole. Melt-flow indicators, integrated at the four corners of the WEPSPLUS, provide for a visual inspection of the installation. The melt-flow indicators reveal whether the WEPSPLUS was properly clamped and energized for a sufficient length of time. This assures that proper bonding and optimum sealing is achieved.

### Product features/benefits

- **Large fusion area (compared to alternative welding methods)**  
Increased bonding/sealing reliability.
- **Mesh type heating element**  
Homogeneous & reliable bonding over its entire contact surface. Consistent and narrow resistance window guarantees consistent installations.
- **Melt flow indicators**  
Assures reliable installation.  
Visual inspectability after installation of all critical installation steps.
- **Protective installation saddles & fully automatic ambient temperature compensating power supply operating at safe low voltage conforming to European safety regulations.**  
Easy and safe installation!
- **Severe qualification testing**  
Reliable & proven performance.

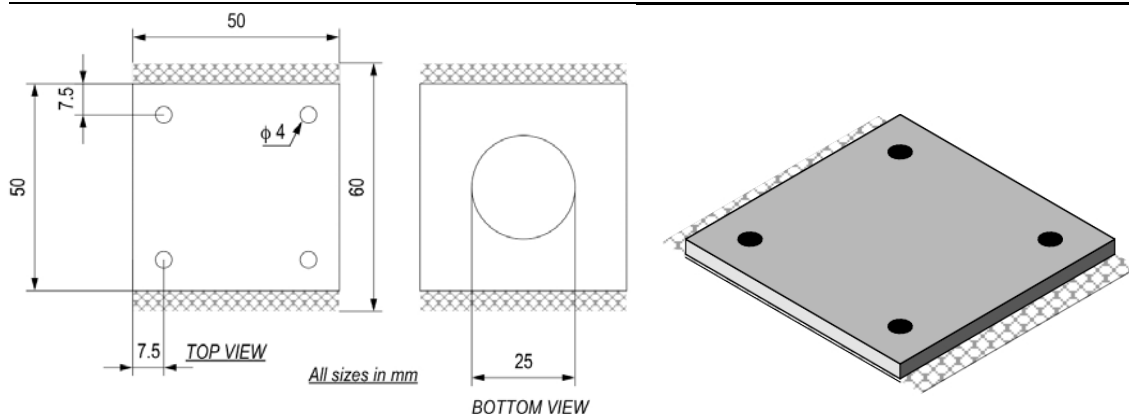
### Product selection guide

	WEPSPLUS
Max. operating temperature	50°C (60°C under expansion cushion)
Joint design	Standard, Oversized, Heat-Shrinkable PE & PEX Casings
Min. preheat temperature	Dry surface
Recommended pipe preparation	Scraping & Cleaning
Soil stress restrictions	None
Performance	> 300 cycles EN489 @ 3 m backfill depth

### Product thicknesses & dimensions

	WEPSPLUS*
HDPE square body	50 x 50 x 3 mm
Heater element	60 x 50 x 0.13 mm
HDPE welding layer	50 x 50 x 0.50 mm
HDPE centering disc	φ 25 x 3 mm

\*WEPSPLUS does not shrink



## Product properties: WEPSPLUS

Property	Test method	Requirement	Typical value
<b>Square body &amp; centering disc</b>			
Yield strength	ISO 527-1 @ 23°C, 50 mm/min	> 16 N/mm <sup>2</sup>	22 N/mm <sup>2</sup>
Tensile strength	ISO 527-1 @ 23°C, 50 mm/min	> 26 N/mm <sup>2</sup>	32 N/mm <sup>2</sup>
Elongation	ISO 527-1 @ 23°C, 50 mm/min	> 650 %	850 %
Density	ISO 1183 @ 23°C	≥ 0.94 g/cm <sup>3</sup>	0.95 g/cm <sup>3</sup>
<b>Metal mesh heater element</b>			
Electrical resistivity	ASTM B193-02 @ 23°C	0.720 - 0.760 μΩ-m	0.740 μΩ-m
<b>Welding layer</b>			
Yield strength	ISO 527-1 @ 23°C, 50 mm/min	> 16 N/mm <sup>2</sup>	18 N/mm <sup>2</sup>
Tensile strength	ISO 527-1 @ 23°C, 50 mm/min	> 26 N/mm <sup>2</sup>	35 N/mm <sup>2</sup>
Elongation	ISO 527-1 @ 23°C, 50 mm/min	> 650%	700 %
Density	ISO 1183 @ 23°C	≥ 0.94 g/cm <sup>3</sup>	0.94 g/cm <sup>3</sup>
Melt flow index	ISO 1133 (190PC / 5.0 kg)	< 3 g/10 min	1 g/10 min
<b>System</b>			
Soil stress resistance	EN 489, 75 mm stroke, 10/50 mm/min speed, 120°C service pipe, 3 m backfill depth	300 cycles	Pass
Followed by: Water permeability test	EN 489, 30°C, 30 kPa	24 hours	Pass

## Ordering information

Product	Standard ordering options
<b>WEPSPLUS</b>	
WEPSPLUS	Foaming hole closure patch (standard pack is 20 pc in a bag)
<b>Accessories (to be ordered separately)</b>	
WEPSPLUS-ICU	WEPSPLUS power supply & control unit, input voltage 200-280 V (AC), output voltage 7 V (AC), 320 x 250 x 150 mm, 9.2 kg *
WEPSPLUS-SADDLE-01	Re-usable clamping tool applying electrical power and welding pressure for pipe φ 90 - 800 mm
WEPSPLUS-SADDLE-02	Re-usable clamping tool applying electrical power and welding pressure for pipe φ > 800 mm
WEPSPLUS-DRILL	φ 25 mm conical drill to make foaming holes, matching WEPSPLUS centering disc
WEPSPLUS-SCRAPER	Tool to remove contaminated PE from installation area

\* 1 piece WEPSPLUS-SADDLE-01 and 1 piece WEPSPLUS-SADDLE-02 are standard delivered together with WEPSPLUS-ICU

For proper product application, see installation instructions IP-WEPSPLUS.

**(주)일진레이텍**  
www.iljinraytek.com

ILJIN RAYTEK Co., Ltd.  
509-4 MAETAN 3-DONG YOUNGTONG-GU  
443-803 SUWON-SI  
GYEONGGI-DO, KOREA  
Telephone: 82-31-215-0356  
Fax: 82-31-215-0350  
E-mail: chs@iljinraytek.com

BR-WEPSPLUS-01-05/2008