OUR SOLUTIONS FOR YOUR BUSINESS

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RZ-ECOSEAL

Prevention of Condensation:

Condensation test completed by Sheffield University 13th May 2019 comparing RZ-Ecoseal to rockwool and K-flex installation recognised below as system 1 and 2.

Findings:
- Condensation occurs on the surface of the pipe sealed with RZ-Ecoseal between 5 and 17 min from the start of the test and disappears at around 20 min.

- Condensation occurs on the surface of the pipes covered with Systems 1 and 2 from the beginning of the exposure until the temperature of the pipe surfaces reaches the dew point at 106 min and is still present at 120 min.

Thermal Conductivity:

Test Completed 1st May 2019 at Sheffield University

Results: 0.15207

Water Vapour Transmission

The tests completed by Sheffield University followed a methodology based on BS EN 12086:2013.

The test show that in comparison to K-Flex and Rockwool, RZ-Ecoseal lets 7 times less water vapour through.
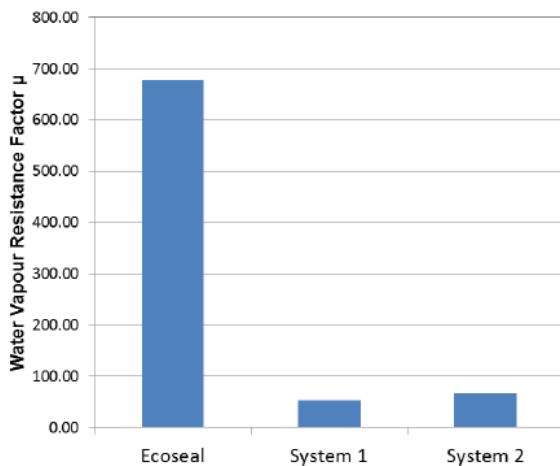

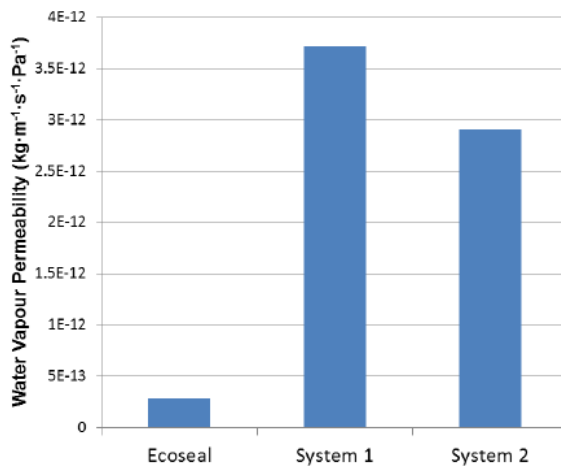Figure 3 Water Vapour Resistance Factor μ

Figure 4 Water Vapour Permeability δ

Current Fire Test:

RZ-Ecoseal is a white, elastic mastic which transforms into a hard crust, like ceramic. This process happens when exposed to high temperatures derived from flames or intensive heat radiation from fire. The insulating capacity of the crust effectively extinguishes the flow of heat to treated surface.

RZ-Ecoseal combined with other parts of a penetration seal is tested according to EN13166 -3:2009 and classified, E160-E1120 depending on penetrating service, in accordance to EC13501-2:2016.

Acid and Alkaline Resistant

RZ-Ecoseal was tested by Intergas Holland due to them needing to find a solution for the new commercial high efficiency boilers. The new high efficiency boiler creates an acid which corrodes ductwork and pipework from day one.

Intergas completed a forced test started in 2018 and finished in 2019 the test covered 6.61 years, after this period the conclusion of the test was that the RZ-Ecoseal was not affected by the acid created from the high efficiency boiler.

Test data available.

Corrosion Resistant:

RZ-Ecoseal creates a barrier/ full seal over the area it is protecting. This prevents the oxygen from affecting the area it is protecting preventing oxidisation.

Due to RZ-Ecoseal properties of being a sealant and not being affected by other weather conditions its long life protects the area for longer period compared to other alternatives.

Tui Cruise Liner out of Rotterdam was sealed in 2016 due to corrosion of the ductwork, this area could not be removed because it was impossible to remove. In 2019 the area was reviewed, and no further corrosion has taken place.

Prevention of Microbial Growth:

Statement from Dr Neil Verner Ph.D. After the completion of his tests on RZ-Ecoseal within HVAC.

A characteristic of microorganisms is their ability to grow and form a population that can rapidly spread and cause disease and discomfort to human beings.

There are a few requirements for successful microbial growth. We will look at them individually and explain how RZ-Ecoseal helps control the microbial growth.

To grow successfully microorganisms must have a supply of water. By sealing the duct internally and completely the sealed joints prevent the ingress of hot and humid air that can condense on the inside of traditional metal ductwork.

Due to the high insulative properties of RZ-Ecoseal on the internal application of the duct will remain almost completely dry preventing the life-giving water to microorganisms.
RZ-Ecoseal provides an anti-microbial surface. It contains polymers that create an environment which is difficult to be inhabited by microorganisms.

Oxygen is used by aerobic bacteria during the process of cellular respiration as a final preparation for incubation and growth. RZ-Ecoseal cannot eliminate the oxygen or seek any oxidative reaction, but by eliminating the moisture and the incubation surface the oxygen concentration will not matter. Temperature also is an issue, but again the preventative issues of water and anti-microbial properties mitigate the risk of temperature.