

CEMswell – Hydrophilic Swelling Rubber

CEMswell – Hydrophilic Rubber

Shield-driven tunnels (TBM) are currently being used for construction work at even greater depths and higher water-pressure environments. The resultant need for improved water sealing characteristics is best met by water-expanding sealant materials, which swell on contact with water.



Introduction

Shield-driven tunnels are common features of such construction works as subways, water supply and sewer systems in cities, tunnels, cable lying, etc. Recent trends in shield-driven tunnels have been towards new applications, increase and decrease in section size, and also construction at greater depths or under the seabed where measures against high-pressure water are of vital importance. CEMswell is a hydrophilic high quality product for sealing all joints in prefabricated concrete constructions.

New Type of Rubber Seal

CEMswell is a new expanding rubber sealing material that is intended mainly for sealing of joints in tunnels and shafts. It has been developed for the successfully use in tunnels in pressure conditions **up to 5 bar water pressure**.

Expansion up to 400 %

CEMswell is an extruded rubber-based compound made from butyl rubber, hydrophilic resin, polyethylene, silicon and special admixtures. On contact with water it is capable of swelling up to 4 times its own volume, and under conditions of confinement will mould itself to exert pressure evenly on the surrounding surfaces, even when these are rough and the gaps to be filled are of uneven size. This feature assures a good water-proof seal without the need for any sort of high-compression force.

Shape and Size

CEMswell is available in numerous standard shapes and sizes, and can also be extruded in non-standard shapes to meet client's special requirements or in combination with ordinary non-expanding rubber. Three main grades are produced and in stock:

18x7mm: 6 rolls à 12 m (72m / box)
 23x15mm: 5 rolls à 6 m (30m / box)
 Ø 23 mm: 4 rolls à 5 m (20m / box)

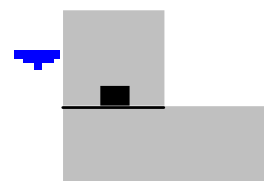
Technical Data

Colour:	Grey (standard)
Shore A:	38
Elongation at break	490 / 770 %
Tensile strength	1.1 / 2.1 MPa
Specific weight:	1.25 g/cm ³ = 1.25
Volume of swelling:	approx. 400 %
Working temperature:	-30 °C to +70 °C
Shelf life:	3 years when stored protected constantly against frost and weather conditions. Concrete cover shall be at least 8 to 10 cm



Do not use CEMswell to seal cold joints of in-situ concrete constructions!
CEMswell shall be used to seal joints of prefabricated concrete constructions!

QUELLMAX (in-situ concrete structures)



CEMswell (prefabricated concrete structures)

