



# UITRA AQUAQUELL WATER BAR

## **NEW TYPE OF RUBBER SEAL**

Ultra Aquaquell is a new expanding rubber sealing material that is intended mainly for sealing of joints in tunnels and shafts. It has been used successfully in tunnels in pressure conditions up to 10 bars, and sections are available that can resist 20 bars.

## **DELAY COATING OPTION**

If required. Ultra Aquaquell can be given a delay coating which prevents swelling for several hours even after contact with water. This allows time for the material to be positioned accurately in underwater conditions, while also providing protection against accidental wetting. Ultra Aquaquell is produced in large quantities and delivered worldwide to numerous organizations and enterprises that require an effective and economical waterproof sealing material. Examples of projects marking use of Ultra Aquaquell include the Channel Tunnel linking England and France, and the Cairo waster water drainage project in Cairo, Egypt.

## **EIGHT-FOLD INCREASE IN VOLUME**

Ultra Aquaquell is an extruded rubber compound made from CR/SBR rubber, hydrophilic resin and urethane, on contact with water it is capable of swelling to eight 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 waterproof seal without the need for any sort of high-compression force.

## **SHAPE AND SIZE ACCORDING TO NEEDS**

Ultra Aquaquell is available in numerous standard shapes and sizes, and can also be extruded in non-standard shapes to meet clients, special requirements or in combination with ordinary non-expanding rubber. Three main grades are produces: 3V (green), 5V (black), and 8V (blue)

## **USE IN SHAFTS AND TUMMELS**

Provided that Ultra Aquaquell is confined within a joint, it can be used with all types of lining, and no mechanical connection is needed, It is suitable for use in manual or mechanical excavation/erection works and for all methods of ground support.

In the case of longitudinal joints using bituminous packing, these packings are modified in size so as to accommodate the Ultra Aquaquell. Ultra Aquaquell can also withstand the shove ram forces occurring at circumferential joints.

Apart from its excellent sealing qualities, Ultra Aquaquell has the additional advantage of requiring no underground work since unlike conventional caulking and pointing materials it is applied to the segments at the surface.

## **SEALING METHODS**

**(1) Single Layer Seal:** Method applicable to most cases. A single length of standard Ultra Aquaquell is applied on the plain face on two joint sides of each segment and key. At each end of the main strip, corner-seal, FC-type, are placed around the corners.

**(2) Double Layer Seal:** Method applicable to cases where grooved segments are used. Ultra Aquaquell is applied to all the sides of the groove in each segment. No special corner mouldings are needed, so Ultra Aquaquell can be applied straight from the reel.

## **IN-SITU AND CONCRETE SEALING APPLICATION**

**Ultra Aquaquell #100 for construction joints.**

Compared with other types in the series, Ultra Aquaquell # 100 has a lower expansion rate and can therefore be used in in-situ concrete with no risk of causing breakage or cracks, In addition. The Ultra Aquaquell # 100 compound is designed especially to avoid rapid expansion by taking up any free water from the concrete mix. It will not make a void for itself in the concrete by expansion. Normally, little or no expansion takes place unless water penetrates the joint during service, at which point the seal will be activated and further penetration of water prevented.

Ultra Aquaquell # 100 is also suitable for use when ne2w concrete is being cast against existing construction materials such as concrete, brickwork or steel. It will also form a good seal for secondary concrete coverings of shield-driven tunnels.

In case of a smooth, dry surface, Ultra Aquaquell # 100 can be held in place by neoprene adhesive or nails. When the surface is rough, AQUABOND (non-vulcanized butyl rubber) can be used.





# UITRA AQUAQUELL WATER BAR

## **PRE-CAST CONCRETE STRUCTURE APPLICATION**

Applications with pre-cast concrete include manhole rings, box culverts, cable troughs, bridge decks and slabs, hume-pipes and jacking pipes. ULTRA Aquaquell BH-1 Type is especially suitable for sealing the joints of hume-pipes.

Ultra Aquaquell is used for numerous applications on construction sites including construction joint seals with in-situ concrete, and sealing of temporary works weir boards, diffuser domes and cofferdams. It can also be used as the sealer for shaft base slabs.

The wide range of shapes, sizes and grades available as standard or to order enable Ultra Aquaquell to be used in all applications where watertight seals are required including domestic pumbing, civil engineering, and undersea construction projects.

## **OTHER APPLICATION**

Its superior performance and ease of use have resulted in Ultra Aquaquell being applied in numerous fields other than that of segmental tunnel linings, for which it was originally developed.

### Storage:

Avoid to place direct to sun light and always store in shady areas.

### ISO Certification:

Our production facility at Pakistan is  
ISO 9001:2008  
ISO 14001:2004  
by BUREAU VERITAS  
and UKAS Management

**WARRANTY:** The Ultra Chemicals LLC. ("Ultra") solely and expressly warrants that its products shall be free from defects in materials and workmanship for 12 months from the date of purchase. Unless authorized in writing by an officer of Ultra, no other representations or statements made by Ultra or its representatives, in writing or orally, shall alter this warranty. **ULTRA MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR ORDINARY OR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES THE SAME.** If any Ultra product fails to conform with this warranty, Ultra will replace the product at no cost to Buyer. Replacement of any product shall be the sole and exclusive remedy available and buyer shall have no claim for incidental or consequential damages. Any warranty claim must be made within one (1) year from the date of the claimed breach. Ultra does not authorize anyone on its behalf to make any written or oral statements which in any way alter Ultra's installation information or instructions in its product literature or on its packaging labels. Any installation of Ultra products which fails to conform with such installation information or instructions shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of Ultra's products for the Buyer's intended purposes.