



PB10 – DOUBLE EXPANDING TORQUE NUT WALL TIE

DESCRIPTION AND USE The stainless steel double expansion remedial wall ties are manufactured from Brass and Austenetic 304 Grade Stainless Steel. The tie has been designed with brass expanders being more sympathetic to the material we are fixing to. It uses a newly designed torque nut to set both the inner and outer expanders independently. The inner fix is affected by a crimped nut which gives the best possible grip on the inner leaf and forces a free moving cone into the expander. This design is an improvement over other ties where the expanders have to be continually taken out, pre-expanded and re-inserted to effect a fix.

APPLICATION A 10mm diameter hole is drilled through the outer leaf brick and into the inner leaf brick to a minimum, depth of 55mm. The hole should be drilled at a slightly inclined angle to avoid ingress of dampness (as recommended in BRE Digest 329) and if necessary, blow out to remove any loose dust and drillings. Care must be taken in selecting the correct length wall tie for the appropriate cavity width.

The PB10 is then inserted into the hole and located into the hole in the inner leaf. The PB10 should be left approximately 10mm inside the face of the outer brickwork. Once in place the setting tool, held in a suitable cordless drill, should be applied to the torque nut to expand the inner body. At a pre-set strength the torque nut will then run down the thread. If a pull test is required for the inner leaf only, it should now be carried out using the appropriate adapter and testing machine.

The outer leaf is loaded by continuing to set the nut with the drill and tool. If testing is required on the completed installation it is performed as described previously.

Typical loads achieved are in excess of 2.5kn.

Below are listed typical tensile failure loads under testing in accordance with BSI DD140 Part 1 and provide indicative values of the tie performance in various base materials. The couplet test produces results of a conservative nature compared to actual wall tests.

Base Material	Compressive Strength (N/mm ²)	Tie Anchorage (Kn)
Common facing brick	20-27.5	7.06
Deep frogged brick	20-27.5	6.86
Dense Concrete block	7-10.5	3.26
Lightweight concrete block	2.8-3.5	1.96

NOTE: The above results are mean failure loads and are either the ultimate pull out load or the load at a deformation of 5mm, whichever occurred first.

SPECIFICATION Certification of conformity. All Brass is manufactured from CZ121 1986 and conforms with BS-EN12164/BS2874.

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