

Wessex 4303

(UW 43 HV)

UNDERWATER EPOXY

Technical
Data Sheet

DESCRIPTION

Wessex 4303 is a two-component epoxide based adhesive specifically formulated to (a) bond to most glass reinforced plastics and other polymeric materials, including many paints and surface coatings when totally immersed in either fresh or sea water, (b) cure at temperatures as low as 5°C and (c) tolerate some oil or grease contamination on the bonding surfaces. Thus this adhesive is capable of forming strong bonds under conditions normally regarded as unacceptable for adhesives.

MIXING

Method	Resin : Hardener
	Part A : Part B
by Weight	1 : 1

The yellow epoxy resin component ("Part A") is mixed with the blue hardener component ("Part B") in the proportion of 1:1 by weight.

Equal weights of the resin and hardener are blended thoroughly together. The differently coloured components provide a visual aid to complete mixing which is indicated when the adhesive forms a uniform green colour.

Small quantities of up to 500g can be mixed by hand, but for larger quantities the use of a mechanical mixer is strongly recommended. Those employing a planetary action have been found to be satisfactory.

To avoid "skinning" of the hardener component after use it is recommended that the polythene film is replaced in intimate contact with the surface of the material. Keep containers closed when not in use to avoid contamination.

STORAGE

Wessex 4303 Parts A and B should be stored in a warm dry environment where a temperature of between 10°C and 30°C can be maintained. After use ensure that the lids and protective polythene sheet are replaced and are tightly secured. This should ensure that there is no contamination of the two components.

USABLE LIFE

When the resin and hardener are mixed the gel time of a 500g batch of Wessex 4303 epoxy is approximately 40 minutes at 20°C and should therefore be used immediately after mixing.

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SURFACE PREPARATION

Although Wessex 4303 is tolerant of some contamination, best results are obtained on well prepared surfaces. Ideally, surfaces should be mechanically abraded to provide the maximum mechanical key and be free from grease, moisture and dust particles and a solvent wash will remove any contamination. If glass fibre laminate forms part of an underwater primary or otherwise important structure, which is in contact with water such as a hull or dome, preparation should be confined to abrasion of the resin alone and the glass should not be exposed.

When the adhesive is used to make an emergency repair, it will not always be possible to make ideal surface preparations and, in some cases, the effectiveness and/or durability of the bond will be impaired. Decisions regarding surface preparation must be taken on site dependent upon the situation in hand, but advice can always be obtained from Wessex Resins & Adhesives Limited.

APPLICATION

1. Apply freshly mixed adhesive and work thoroughly into both mating surfaces prior to making the joint. The adhesive may be applied in quite thick sections if gaps need to be filled.
2. Spread as evenly as possible with the minimum entrapment of air.
3. Hold bonded surfaces together by light clamping or suitably placed weights until set.
4. Do not subject to heavy stress until final cure is complete. Time and adequate cure is a function of ambient temperature and the nature of the job in hand.

EMERGENCY REPAIRS

Emergency repairs to leaking pipes, tanks and joints may be made by using the Wessex 4302 or Wessex 4303 epoxy in conjunction with an open cell soft polyurethane foam carrier. The adhesive should be mixed in the usual way and then worked thoroughly into a pre-cut foam pad of the appropriate size and shape. The adhesive must also be worked into the damaged substrate. The impregnated pad is then pressed strongly against the leak and held in place with a shaped metal backing plate for example, throughout the curing period or until a sufficiently high joint strength has been developed. In certain circumstances, a hot air blower may be used to accelerate this curing process and an adequate bond strength may be developed within an hour. In any event, if the repair is to be successful, the leak will be stopped immediately upon application of the resin soaked foam, in which case there will be no objection to leaving the clamping device in position for as long as necessary.