

A Novel Waterblocking Technology for Communication Cables

Within the optical fibre cable industry over the past decade there has been a move away from the use of traditional flooding media such as oil/based greases and gels, towards the use of tapes or yarns with super absorbent polymer powders (SAP's) bonded to them. The advantages of such dry technologies are clear; they allow the production of lighter thinner cables, and the jointing of cables is easier with less messy clean down regimes. In production there are engineering advantages, there is no need to ensure that the cable is completely filled with air free gel to prevent water ingress, and the tapes and yarns can contribute to the overall tensile strength of the cable.

Conventional water swelling tapes and yarns do, however, have drawbacks; their usual method of production involves bonding super absorbent polymer powder to the surface of a tape or yarn. The tapes are usually a laminate of super absorbent powder between two layers of fabric, and are therefore relatively thick – they may add to the tensile strength of the cable but they also reduce flexibility. During production, there is also a considerable risk of the powder detaching from the surface leading to particulate matter in the atmosphere with attendant risk of inhalation. Powder particles below 30 µm are considered carcinogenic, and it is inadvisable to inhale a material that will expand sixty times in contact with moisture. Wherever the powder settles it absorbs atmospheric moisture and causes a slip hazard.

Sahara™ is a unique water borne solution of an ionic/acrylate polymer with additives that is designed to be applied directly to fabric tapes and yarns using conventional coating techniques. When dried, **Sahara™** forms a super absorbent film similar in character to super absorbent powders, with the following advantages:

- **Sahara™** tapes contain no powders so they are considerably less hazardous; there is no risk of powder 'dusting off' causing inhalation or slip hazards.
- Lighter, thinner tapes and yarns, therefore lighter, thinner cables.
- **Sahara™** swells faster than powders ensuring rapid and effective water blocking of cables.
- The process of manufacturing tapes and yarns is simplified, and speeded up.
- Allows the production of superior yarns that are low shrinkage, flat, flexible and strong.

Sahara™ offers the cables industry the ideal combination of cost effectiveness, ease of use, performance and safety.

For further information about **Sahara™**, please contact H&R ChemPharm (UK) Ltd.

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