Shelf Life

Shelf life is the time a material may sit unused and still perform as designed. ATL Composites recommend that WEST SYSTEM® resin and hardeners should be kept in the original containers with the caps tightly sealed, and stored at room temperature (15°C to 32°C) to provide a 2 year shelf life from when the pack has been opened.

ATL Composites has found that WEST SYSTEM® products, outside that time frame have cured without problems, but certain changes may make them less effective for some jobs.

Changes in product characteristics

WEST SYSTEM® R105 Resin. Unrelated to temperature, resin may thicken after several years, which makes pumping, pouring and stirring much more difficult. This condition is not reversible, but the product can still be used if extra care is taken to ensure thorough mixing with hardener.

Crystallization, aggravated by exposure to freeze/thaw cycles, causing the resin to appear milky, is rare. If crystallization occurs it is easy to revert by heating the resin.

WEST SYSTEM® H205 Fast Hardener. This hardener may emit a strong ammonia odour if it has been stored in a closed container for a long time. Once opened, the ammonia odour escapes and the hardener's smell returns to normal.

Exposure to metal may cause the H205 hardener to turn deep red or purple. The hardener colour will not affect the epoxy's cured physical properties. In thin film coatings, the colour is difficult to detect, but mixed with white fillers it becomes very noticeable. The hardener colour change is not reversible.

WEST SYSTEM® H206 Slow Hardener. This product can also emit a strong ammonia-like odour, but is not as likely to turn red.

WEST SYSTEM® H207 Special Clear Hardener . A fairly yellow material by design, this hardener may become even more yellow with time.

Thin layers of H207 hardener, (such as a drip from a mini pump) may solidify from exposure to air. This can plug the pump nozzle and will have to be removed.

WEST SYSTEM® H209 Super Slow Hardener. A thin film of this hardener may also solidify when exposed to air. This white solid is the result of a chemical reaction between the component of the amine hardener, moisture and carbon dioxide (CO_2) in the air. A strong ammonia-like odour may develop if it is stored in a sealed container for a long time.

When age is not the issue

Most often, problems with older epoxy are not related to age but to some other condition, such as the presence of a contaminant. Moisture contamination is a common culprit, especially when the product is left outside with the container top off and dew or rain finds its way into the container. Condensation inside a container can occur when stored in a cold environment and warmed quickly.

Other contaminates

Stored in bright sunlight or too warm an area, the epoxy container can degrade, contaminating its contents. Other common contaminates include dirt, saw dust, sand or dust particles, all of which can easily enter an uncovered container. Contact with chemicals, oil, paint or solvents can also permanently damage resin or hardener.

Hardener / Resin cross contamination

Sometimes through carelessness, hardener finds its way into the resin container or vice versa. This form of contamination is marked by chunks of cured materials or stringy areas. Not much can be done to resolve this form of contamination, and both resin and hardener may be wasted.

Those who have used polyester resins know that its shelf life is only about six months. Afterwards, it turns to a useless jelly-like substance. An abundance of expired materials can easily offset any initial cost savings these materials may offer. WEST SYSTEM® epoxy is not so limited. Its excellent shelf life, augmented by proper storage and good housekeeping, permit quantity purchases.

ATL composites

ATL composites Pty Ltd
Tel (+61) 7 5563 1222
Fax (+61) 7 5563 1585
info@atlcomposites.com
www.atlcomposites.com
www.westsystem.com.au