



SIKA SOLUTIONS FOR STRUCTURAL BONDING

MATERIALS AND TECHNOLOGIES

The main property of elastic bonding adhesives is that they are capable to support high mechanical stresses.

This single detail gives rise to concerns regarding the finished vessel in service, where, despite the improved assembly benefits, there can still be localised stress issues and a greater possibility of joint fracture due to impact or crushing forces.

Following extensive research, Sika has found that by introducing a degree of flexibility, these problems are greatly improved.

The Sikaflex® elastic adhesives for structural bonding are:

- Sikaflex®-292i
- Sikaflex®-296
- Sikaflex®-295 UV

Sikaflex®-292i is used to bond flybridges and keels as each of these can be subject to far greater local forces than other main components. The greater flexibility in these cases means that there will be greater 'give' in the first instance. The members would be more likely to be pulled off the vessel whole, without ripping pieces from the hull or superstructure. This also means that there is every chance that the components can be refitted without needing to be replaced.

Sikaflex®-295 UV and -296 are each used for glazing, as windows are increasingly used as structural members. Sikaflex®-295 UV is used for organic glazing and backfilling and Sikaflex®-296 is used for mineral glazing. In both cases the greater flexibility is to prevent forces being transmitted to the glazing that would otherwise damage it.

The following examples show the capability of the Sikaflex® Marine adhesives. However the custom tailored characteristics gives naval engineers and constructors the possibility of economic and sustainable new realisations. Sika will be happy to support you in the development and testing of new applications.

		MECHANICAL FIXING	LAMINATING TAPING	ELASTIC BONDING
MANUFACTURING	Time consumption	●	●	○
	Material cost	●	●	●
	Process complexity	● / ●	●	●
	Health / safety / environment	● / ○	●	●
	Tolerance gapping	●	●	●
	Assembling different (lightweight) materials	●	●	●
FINAL PERFORMANCE	Durability / fatigue resistance	○	●	●
	Durability / corrosion resistance	●	●	●
	Weight reduction	●	●	●
	Comfort (acoustics)	●	●	●

● Very good ● Good ○ Neutral ● Poor ● Very poor

