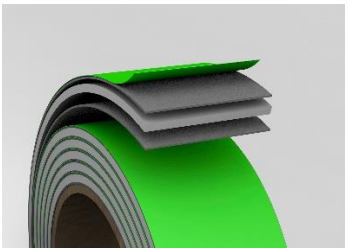
ORABOND® UHB12110B

Description

The ORABOND® UHB12110B tape consists of a grey-foamed acrylic pressure sensitive adhesive designed for high performance bonding and mounting applications requiring high shear holding power and/or high temperature resistance. The tape is constructed with black outer layers and a grey core. The viscoelastic properties of the UHB tapes allow it to balance the occurring tensions caused by different thermal expansion coefficients of bounded materials. Furthermore, the adhesive flows into the microscopic material surfaces achieving through an excellent 'wet out' extremely high bonding results and offers excellent UV-stability.

Liner

Siliconized PE-film (0,13 mm, red with ORAFOL logo) Liner code: 72
Other types on request



Tape construction

Three-layer (two black functional layers on grey core)

Adhesive

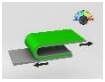
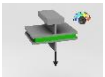
Acrylic adhesive "UHB12" (black/grey)

Area of use

This tape is suitable for a wide range of commercial and industrial applications, including in automotive, solar, electronic, sign and display industries.

The viscoelastic properties of UHB® (UHB® = Ultra-High-Bond) tapes allow them to compensate for material stresses caused by differing thermal expansion coefficients of the bonded materials. Additionally, the ability to flow into uneven surfaces allows an excellent “wet out” of the substrate and leads to extremely good bonding values. Only for commercial purposes.

Technical Data*

Thickness (adhesive)		1,1 mm (±15%)
Density		730 kg/ m³
Temperature resistance (short-term)		-40° C to +200 °C
(long-term)		-40° C to +100 °C
Adhesion after 24h (based on ASTM D3330, stainless steel)		51 N/25 mm (204 N/100 mm)
Shear strength after 24h (based on ASTM D1002, stainless steel)		0,80 N/mm² (80 N/cm²)
Tensile adhesion (T-pull) after 24h (based on ASTM D897, aluminium)		0,78 N/mm² (78 N/cm²)
Shelf life **		2 years
Application temperature		> +15 °C

* average ** in original packaging, at 20°C and 50% relative humidity

Application instructions

At ORAFOL we are interested in the successful application of our pressure-sensitive adhesives by our customers. The following notes are intended to provide suitable support for customer-specific application tests. In all cases, in case of uncertainties, please contact your ORAFOL representative. (www.ORAFOL.com)

Preparation / cleaning	To achieve optimum adhesion, all surfaces must be free of loose materials, e.g. dust or other particles. It is important to remove any oil, grease or aqueous films. For example, the "ORAFOL Cleaner" (a mixture of isopropanol and water) can be used, with the use of lint-free disposable towels if possible. After cleaning, the surface energy can be measured with Dyne Test Pens. More persistent contaminants may require the use of stronger / alternative cleaners such as heptane or other solvents.
Surface pretreatment	Some materials do not provide an adequate surface for adhesion even after proper cleaning and require surface pre-treatment. This can be done via physical methods (roughening or flaming the surface) or by chemical methods (e.g. pickling).
Adhesion promoters (primers)	By using the adhesion promoter ORABOND® UHBPrimerA (or B with UV indicator), better adhesion, stronger initial bond strength and better adhesion below 15 °C can be achieved, especially for high-shear ORABOND® acrylic adhesives. IMPORTANT: Only use adhesion promoter on the adhesive areas! For this purpose, the corresponding area can be demarcated with masking tape (for example ORATAPE® MT95). For glass bonding in outdoor applications, we recommend using the silane based UHBPrimerG.
Contact pressure	Pressure-sensitive adhesives develop their specified adhesive forces from a defined contact pressure. The amount of pressure depends on the desired initial tack, the adhesive used, and its width and thickness. For a 10 mm wide ORABOND® tape, roll weights between 2 and 7 kg at 10 mm/s are used. The pressure can be checked with chalk pencils or a transparent mating part.
Temperature	An average room temperature of approx. 21 °C / 70 °F is recommended for bonding. Special low-temperature UHB® grades and the use of the ORABOND® UHBPrimerA / B can be helpful for colder conditions and substrates. Condensation on the surface should be avoided at all costs.
Time	Depending on the design and temperature, ORABOND® UHB pressure sensitive adhesives require some time to achieve full adhesion, ranging from 24-72 hours at 21 °C / 70 °F. Preheating surfaces and using the UHBPrimerA / B reduce the time to full adhesion.
Tape loading and design parameters	The following design parameters apply to our ORABOND® UHB Acrylic Foam Adhesive Tapes: For static loadings, peel and splitting forces must be avoided. For tensile or tensile shear loadings: 60 cm² adhesive tape per 1 kg static load. UHB® systems can compensate for 300% of their thickness with thermal expansion. For joint gap tolerances, these systems can compensate for 50% of the tape thickness per metre, provided these tolerances are not in the form of steps or edges.