



PRODUCT SPECIFICATION SHEET

STARBOND USA, USA PLUS, and USA PREMIUM aluminum composite material uses a polyethylene core with aluminum facers on each side. All products offer an ultra-smooth, maintenance-free and long-lasting material that is excellent for all types of printing, painting, die-cutting, mounting and vinyl wrapping.

TOLERANCES		
Thickness	± 0.2 mm	
Width	± 2 mm	
Length	- 0 / + 4 mm	
Diagonal	± 5 mm	
Aluminum Thickness	± 0.02 mm	
Thermal Expansion	2.4 mm/m @ 100°C Temp Difference	
PANEL DIMENSIONS		
Panel Thickness	3mm	6mm
Aluminum Thickness	.006", .008", .012"	
Standard Sizes	48" x 96", 48" x 120", 48" x 144", 60" x 120"	
Weight - lbs/ft²	.716 (.006"); .72 (.008"); .86 (.012")	1.68
TECHNICAL PROPERTIES		
Sound Insulation - dB	24	
Heat Coefficient - W/m²K	5.61	5.30
Aluminum Alloy	1100	
E-module - N/mm²	70.000	
Tensile Strength - N/mm²	145-185 RM	
Core, Black PE - g/cm³	0.92	
Flammability BS476	Part 6: Class 0, Part 7: Class 1	
UL Certification	Listed: SAM & iq.ul.com : Sign Accessories Component # UYMR2.E493929	
SURFACE PROPERTIES		
Paint Thickness	20µm - Enhanced Digital Polyester	
Acid Resistance	Immerse surface in 2% HC1 for 48h no change	
Alkali Resistance	Immersed surface in 2% NaOH for 24hrs without change	
Oil Resistance	Immersed surface in 20# engine oil for 24hrs without change	
Solvent Resistance	Cleaned 100 times with Dimethylbenzene without change	
Gloss Value	35% Matte / 20% – 95% Gloss (Tolerance ± 5%)	
Pencil Hardness	>HB	
Temperature Resistance	- 50°C to + 90°C	
Color Variation	5 year ΔE 3	
Chalking	5 year index 8	
Outdoor Durability	5 year warranty	
Indoor Durability	10 year warranty	

We believe the information on this product to be accurate. However, since we cannot anticipate or control the conditions under which this information or our products may be used, we cannot guarantee results obtained through their use. Tests of our products should be made by users to determine the suitability of these products for a specific purpose.



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WARRANTY INFORMATION

This warranty is issued by Graphic Solutions Group, Inc., the maker of StarBond USA ("StarBond USA") to the "Purchaser" who acquires StarBond USA's products directly from Graphic Solutions Group, Inc. All sales are expressly conditioned on Purchaser's agreement to the terms set forth herein, and Purchaser represents and warrants that Purchaser has reviewed and is in agreement with same without exception. Any order or statement of intent to purchase any product from StarBond USA, or any direction to proceed with procurement, manufacture or shipment of any of said product, or acceptance of all or part of such product, or payment of all or part of such product shall constitute assent to said terms and conditions. Any different or additional terms and conditions proposed by Purchaser in a purchase order or otherwise, are objected to by StarBond USA and will not be binding upon StarBond USA unless specifically assented to in writing by an officer of StarBond USA.

Subject to the terms and conditions set forth herein, StarBond USA provides the following warranties:

Bond Integrity Warranty: StarBond USA warrants that the Aluminum Composite Material ("ACM") furnished by StarBond USA will not exhibit any visually observable deformation as a result of delaminating of the aluminum skin from the core material due to manufacturing defects. This warranty will remain in effect for a period of ten (10) years and shall commence on the date the product is purchased from Graphic Solutions Group, Inc.

Limited Paint Finish Warranty: StarBond USA warrants that the painted finish of the ACM will retain its color, chalk, and film integrity as defined below.

- i. (Film integrity) StarBond USA warrants that during the warranty period the products will not peel, or crack as a direct result of manufacturing defects.
- ii. (Chalking) StarBond USA warrants that, in absence of standing water, the products will not chalk in excess of a numerical rating of 8 during the warranty periods explained in the chart below when measured in accordance with the standard procedures specified in ASTM D-4214.
- iii. (Color retention) Unequal color changes as a result of unequal exposure to the elements, are not covered by this Limited Warranty unless the color change meet ΔE as specified under ASTM D-2244-02, paragraph 6.2.2 CIEL*a*b*, 10°. The color change is measure on an exposed painted surface that has been properly cleaned of soils and chalk and then compared to corresponding values of the original surface.
- iv. This warranty does not cover any damage to the coating that occurs prior to installation of the product, including but not limited to improper storage or handling of the product. Fabricating and forming of StarBond USA panels below a temperature of 60 ° F can affect the appearance of the PE, PVDF, FEVE coatings.
- v. The Duration of the warranty will be in accordance with the warranty table shown herein and shall apply in the United States. The warranty period starts on the date on the date the product is purchased from Graphic Solutions Group, Inc.

vi. Duration of Limited Paint Finish Warranty:

COATING TYPE	APPLICATION TYPE	WARRANTY DURATION
PRINTABLE POLYESTER	INDOOR USE	10 YEARS
	OUTDOOR USE	5 YEARS

Remedies. In the event any part or portion of the ACM fails to conform to this warranty, StarBond USA shall be given opportunity to inspect the product claimed to be defective. If after inspection of the product StarBond USA determines in its sole and absolute discretion that the claimed defect is covered by this warranty, StarBond USA shall, at its sole option, refund the purchase price of the product or refurbish, repair or replace the defective product.

Warranty coverage is subject to the terms, conditions, limitations, remedies and legal rights set forth below

1. IT IS UNDERSTOOD AND AGREED THAT THE REMEDIES PROVIDED FOR HEREIN ARE EXCLUSIVE WHETHER FOR BREACH OF EXPRESS WARRANTIES OR OTHERWISE AND SHALL CONSTITUTE THE PURCHASER'S EXCLUSIVE REMEDY AND StarBond USA'S EXCLUSIVE LIABILITY.
2. All warranty work will be performed by StarBond USA or by a distributor, company or contractor selected by StarBond USA. At no time does the warranty confer upon the Purchaser or any other party the right to proceed with repair, replacement or restoration without written notice and agreement by a duly authorized officer of StarBond USA. Any work undertaken by the Purchaser or any other party shall result in the warranty becoming null and void.
3. The warranty period for any repaired or replaced product shall be for the remaining unexpired portion of the original warranty period for the product repaired or replaced.
4. As color variances may occur between replacement products in comparison with the originally installed product due to normal weathering and aging of the originally installed product, this will not be indicative of a defect in either the replacement product or the originally installed product.
5. StarBond USA reserves the right to discontinue or modify any of its products at any time. In the event StarBond USA elects to replace the defective product and the original product is no longer available, StarBond USA agrees to use commercially reasonable efforts to substitute comparable products from its inventory.
6. The warranties stated herein only cover factory defects subject to normal use and service. They do not cover failures unrelated to the manufacturing process or attributable to causes or occurrences beyond StarBond USA's control, including, but not limited to, improper fabrication or installation of the product (see StarBond USA Fabrication guidelines for more information), materials or equipment not designated for use with the product, exposure to corrosive atmospheres (such as salt spray, acid rain, harmful chemicals or vapors), mold, mildew, unreasonable use, misuse, physical abuse, accidental damage, neglect, vandalism, improper storage, alteration of the product, fire, flood, earthquake, lightning, ice, windstorms, other acts of God, wind borne objects, building settlement, structural failures (including walls and foundations), or any design or specification supplied by Purchaser. They do not



cover the normal weathering of any exposed core material due to UV exposure. They do not apply to damage or defects resulting from the use of harmful cleaning products. To that end, StarBond USA recommends a fresh water rinse in areas with high salt concentration or in industrial atmospheres to prevent accumulation of harmful residue on the aluminum surface.

7. THE BOND INTEGRITY WARRANTY AND LIMITED PAINT FINISH WARRANTY ARE THE ONLY EXPRESS WARRANTIES EXTENDED BY StarBond USA IN CONNECTION WITH ITS PRODUCTS. THERE ARE NO OTHER WARRANTIES, EITHER WRITTEN, ORAL, IMPLIED OR STATUTORY, RELATING TO THE StarBond USA'S PRODUCTS THAT EXTENDS BEYOND THOSE DESCRIBED HEREIN. WHETHER EXPRESS OR IMPLIED, StarBond USA MAKES NO REPRESENTATIONS OR WARRANTIES REGARDING THE MERCHANTABILITY, QUALITY, PERFORMANCE, NON-INFRINGEMENT OR FITNESS FOR PARTICULAR PURPOSE FOR ANY PRODUCT PROVIDED TO PURCHASER. FURTHER, StarBond USA MAKES NO WARRANTY OR REPRESENTATIONS REGARDING THE VISIBILITY OF THE PRODUCT, THE COMPATABILITY OR OTHER ABILITY OF THE PRODUCT TO INTEGRATE WITH PURCHASER'S SYSTEM(S), EQUIPMENT, MATERIALS OR PROPERTY, OR WHETHER THE PRODUCTS WILL CONTINUE TO BE AVAILABLE IN THE FUTURE.
8. StarBond USA assumes no responsibility and makes no representations or warranties as to whether the products sold to Purchaser comply with any national, state, or local statutes, laws, regulations, restrictions, limitations or other applicable directives.
9. **StarBond USA's liability on any claim for loss or damage arising out of any agreement between the parties or from the performance or breach thereof or connected with the supplying any product to Purchaser, or the product's sale, resale, operation or use, whether based on contract, warranty, tort (including negligence) or other grounds, shall not exceed the price paid for such product involved in the claim. StarBond USA shall not, under any circumstance, be liable, for any labor charges without the prior written consent of StarBond USA. StarBond USA shall not in any circumstance be liable, whether as a result of breach of contract, warranty, tort (including negligence) or other grounds, for special, indirect, consequential, incidental or penal damages including, but not limited to, loss of profits or revenue, loss of good will, loss of use of the product sold by StarBond USA or any associated product, system or mechanism, cost of capital, cost of substitute products, facilities or services, downtime costs, or claims of customers of the Purchaser for such damages. If StarBond USA furnishes Purchaser with advice or other assistance which concerns any product supplied StarBond USA, the furnishing of such advice or assistance will not subject StarBond USA to any liability, whether based on contract, warranty, tort (including negligence) or other grounds.**
10. Purchaser is solely responsible for proper selection of StarBond USA's products. Purchaser agrees that it will use StarBond USA products only for their intended uses and according to the specifications and limitations established by StarBond USA from time to time. Purchaser acknowledges and agrees that StarBond USA products are to be used for commercial applications and are not intended for residential individual single-family dwellings.
11. Purchaser will defend, indemnify, and hold harmless StarBond USA and its employees, officers, directors, agents, affiliates, successors and assigns from and against any and all claims, suits, actions, demands, damages, losses, liabilities, penalties, fines, costs and expenses (including, without limitation, attorneys' fees) whatsoever that are incurred by or made against any indemnitee herein named that arise out of or result from (i) the acts, omissions, negligence or misconduct of Purchaser or its employees, officers, directors, agents, affiliates, successors and assigns, (ii) any claim by any successor holder (including, but not limited to, any end user) of any of StarBond USA's products purchased by Purchaser, and (iii) any claims for patent infringement which may result from the manufacture, production or sale of articles made in accordance with Purchaser's specifications.
12. The warranties set forth herein are extended only to the Purchaser and are not assignable or transferable. Any such assignment or transfer shall render the warranties null and void.
13. These warranties set forth the entire agreement between Purchaser and StarBond USA relating to the products. They may not be modified or changed except by a written document signed by an officer of StarBond USA.
14. Purchaser acknowledges that StarBond USA's principal office is located in Dallas, Texas and that all amounts owed to StarBond USA are due and payable in Dallas, Dallas County, Texas. Accordingly, all agreements between the parties shall be subject to, governed by, enforced and construed in accordance with the laws of the State of Texas, without regard to conflict of law principles that would result in the application of any law other than the law of the State of Texas. The parties agree that the exclusive jurisdiction for any lawsuit arising out of any agreement or the sale of products to Purchaser shall be the state and federal courts located in Dallas, Dallas County, Texas. Purchaser agrees to personal jurisdiction in Texas and waives any objection based on forum non-convenient or any similar argument.
15. If any part of these terms and conditions or any other written agreement between the parties is judicially declared invalid, unenforceable, or to be void because it is inconsistent with, violative of, or contrary to any applicable law, such declaration shall not affect any other part of the applicable agreements and the part so affected shall be reformed to the extent (and only to the extent) necessary to make the agreements between the parties enforceable or, if necessary, violative provision shall be deemed to be deleted, and the remainder of the agreement between the parties shall have the same force and effect as if such part had never been included therein. The invalidity or unenforceability of any part in any jurisdiction shall not affect the validity or enforceability of any such part in any other jurisdiction.