

Technical Literature I-01

## Adhesion of AURUM<sup>®</sup>

Various adhesives can be used in bonding AURUM<sup>®</sup>/AURUM<sup>®</sup> and AURUM<sup>®</sup>/other materials. However, adhesion varies with the types of adhesives and hardening conditions, among other things.

The Table below gives an example of adhesive strength of an AURUM<sup>®</sup> molded article/AURUM<sup>®</sup> molded article composite bonded by the lap joint method.

AURUM<sup>®</sup>: #450  
 Bonded section: Lap joint width: 6 mm; overlapping length: 15 mm; overall bonded area: 90 mm<sup>2</sup>  
 Degreasing reagent: Methanol  
 Pressing load: 75 g/cm<sup>2</sup>  
 Testing method: Tensile shear

Adhesive system	Type	Hardening method	Adhesive strength, kg
EH455NF (MTC)	Epoxy-based	23°C*3 days	12
		150°C*1 hr	40
EH454NF (MTC)	Epoxy-based	23°C*3 days	23
		150°C*1 hr	45
Araldite Rapid (CIBA-GEIGY):	Epoxy-based	23°C*3 days	12
		150°C*1 hr	160

The information contained herein is based on the information and data available at this moment, but none of the data or evaluation results contained herein provide any warranty whatsoever.

Bonding of AURUM<sup>®</sup> JCN3030  
(Effect of Surface Treatment in the Use of a Urethane-based Adhesive)

Conditions	Adhesive strength, kgf/mm <sup>2</sup>
Without surface treatment:	0.78
Plasma treatment: 0.75 KW - 0.5 min	2.74
0.75 KW - 5 min	2.98
1.5 KW - 5 min	3.08
Corona treatment: 500 W – 0.5 min	2.80
500 W – 3 min	1.95
Chemical etching:	2.7 – 3.4

Lap Joint between Aluminum Plate and JCN3030 (Containing CF)

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## Adhesive Strength of AURUM®

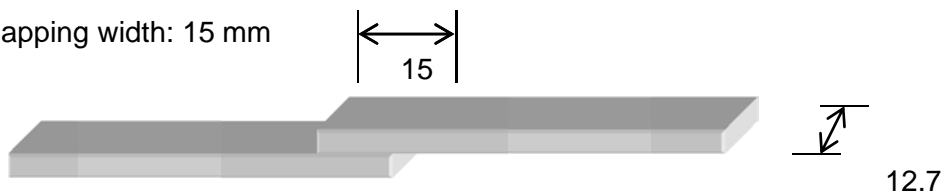
### 1. Samples

- Flexural Test Samples  
#450  
JCN3030  
JGN3030  
JRN3015  
JQF3025

### 2. Testing Method

- Adhesive Used:  
ARALDITE
- Opposite bonding surface:  
Aluminum or #450
- Bonding method:  
The bonding surface of the metal was smoothed with sandpaper (#600) and cleansed with methanol. After that, the samples were bonded in the following manner:

Overlapping width: 15 mm



- Measurement:  
The tensile shear was measured after the bonded sample was allowed to stand at room temperature for 2 days after bonding.  
Testing rate: 5 mm/min.

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### 3. Results

Sample	Opposite surface	Actual strength, kgf	Strength, kgf/cm <sup>2</sup>	Failed condition
#450	Aluminum	102	54	Failed (peeled) at bonded area
JCN3030	Aluminum	96	51	“
JGN3030	Aluminum	120	63	“
JRN3015	Aluminum	92	48	“
JQF3025	Aluminum	102	54	“
#450*	#450	110	60	“
#450*	Aluminum	103	53	“
JRN3015*	Aluminum	76	40	“

\* The samples were dried at 150°C and bonded after they were cleaned with methanol.

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