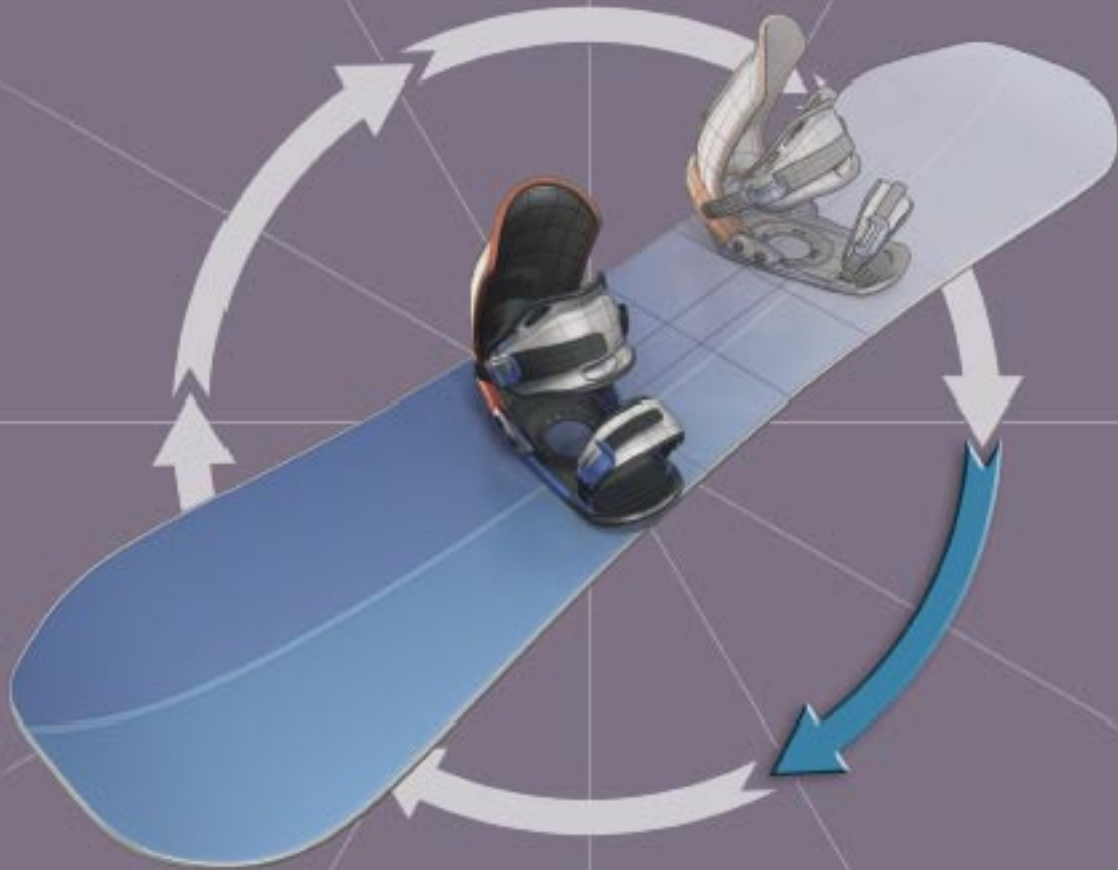


# SPORT AND LEISURE Advanced Materials SELECTOR GUIDE

In Sport & Leisure every gram counts! Lightweight, strength, flexibility, design freedom and fatigue resistance are key factors affecting athletic performance. Advanced Materials have over 50 years experience of combining design materials, composite resins and adhesives in sport and leisure applications. Let us help you to exceed your expectations.



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# Design

## Stereolithography

Product	SLA® System	Colour	Viscosity at 28°C (cps)	Flex. Strength ASTM D-790 (MPa)	Tens. Strength ASTM D-638 (MPa)	Elongation ASTM D-638 (%)	Notched Izod Imp. ASTM D 256 J/m	Heat Deflection Temp. at 0.46 MPa (1.8 MPa) ASTM D-648 (°C)	Comments
RenShape® SL 5195	SLA® 5000	Clear amber	220	49	47	11	54	47 (43)	Highly accurate SL material for master patterns
RenShape® SL 5240	SLA® 250	Clear amber	350	55	37	24	48	58 (50)	PP like parts with high durability
RenShape® SL 5260	SLA® 250	White	290	81	58	12	40	58 (51)	ABS like with fine features
RenShape® SL 5510	SLA® Viper si2	Clear amber	230	103	66	5	26	54 (47)	Highest accuracy SL material
RenShape® SL 5510	SLA® 350 / 3500 / 5000	Clear amber	230	99	77	5	27	62 (53)	Highest accuracy SL material
RenShape® SL 5530	SLA® 350 / 3500 / 5000	Clear amber	270	75	59	4	21	78 (57)	High temperature resistant SL material
RenShape® SL 5530	SLA® 7000	Clear amber	270	115	59	4	21	68 (56)	High temperature resistant SL material
RenShape® SL 7510	SLA® 350 / 3500	Clear amber	400	81	57	10	37	58 (49)	Accurate multi-functional SL material with high throughput
RenShape® SL 7510	SLA® 5000	Clear amber	400	82	44	14	32	51 (47)	Accurate multi-functional SL material with high throughput
RenShape® SL 7510	SLA® 7000	Clear amber	400	61	51	4	27	51 (45)	Accurate multi-functional SL material with high throughput
RenShape® SL 7520	SLA® 7000	Clear amber	570	100	64	6	17	54 (49)	High throughput multi-functional SL material with exceptional surface finish
RenShape® SL 7540	SLA® 5000	Clear amber	360	50	39	22	42	57 (54)	PP like suitable for "snap-fit" parts
RenShape® SL 7545	SLA® Viper si2 3500 / 5000 / 7000	Clear amber	430	58	38	17	34	49 (46)	PP like parts with high durability
RenShape® SL 7560	SLA® Viper si2 3500 / 5000 / 7000	White	250	94	52	11	36	58 (-)	Durable SL material that simulates ABS-like parts
RenShape® SL 7570	Solid state laser	Clear	180	96	59	6	25	55 (-)	Clear parts with excellent accuracy
RenShape® SL 7580	Solid state laser	White	580	82.8	53.1	11	32	63 (52)	ABS-like with good temperature performance
RenShape® SL 7585	Solid state laser	White	770	57.5	40	11	34	61 (-)	Colour change on curing. ABS-like with good temperature performance

## Adhesive systems

Product	Mix Ratio (pbw)	Pot Life at 23°C (min)	Gel Time at 60°C (min)	Recommended Cure Schedule (°C)
Araldite® AW 1106 / Aradur® 1953-2	100:80	120-150 (100 ml)	30-36	180 min @ 40 or 50 min @ 70 or 10 min @ 100
Araldite® AW 1136 / Aradur® 5049-1	100:30	70-80 (200 ml)	18-24	60-90 min @ 60 or 20-35 min @ 80 or 7-16 min @ 100 or 3.5-9 min @ 120
Araldite® AW 1137 / Aradur® 5049-1	100:30	70-80 (200 ml)	18-24	60-90 min @ 60 or 20-35 min @ 80 or 7-16 min @ 100 or 3.5-9 min @ 120

## Composite resin systems

### RTM and wet lay-up systems

Product	Pot Life 100 ml at 23°C	Gel Time at 80°C (min)	Recommended Cure Schedule (°C)	Tg* (°C)	Flexural Strength ISO 178 (MPa)	Ultimate Flexural Elongation (%)
<b>Araldite® LY 5085 / Aradur® 5046</b>	150-180	9-13	60 min @ 80 or 10 min @ 110 or 8 min @ 120	88	90-100	10-14
<b>Araldite® LY 5085 / Aradur® 5046-U</b>	150-180	9-13	60 min @ 80 or 10 min @ 110 or 8 min @ 120	88	100-120	12
<b>Araldite® LY 1564 / Aradur® 3486</b>	560-620	33-43	8 hr @ 80	80-84	118-130	10.5-12.5
<b>Araldite® LY 1564 / Aradur® 3487</b>	130-160	18-25	8 hr @ 80	81-86	118-130	10.0-12.0
<b>Araldite® LY 3505 / Aradur® 5003-1</b>	42-56	4-7	30 min @ 80 + 2 hr @ 100	110-120	140-150	7.0-8.0
<b>Araldite® LY 3505 / Hardener XB 3403</b>	600-720	36-48	4 hr @ 60 + 6 hr @ 80	78-83	110-130	10.5-13.0
<b>Araldite® LY 3505 / Hardener XB 3404-1</b>	80-100	11-18	4 hr @ 60 + 6 hr @ 80	76-81	125-145	6.5-9.5
<b>Araldite® LY 3505 / Aradur® 3405</b>	26-36	5-11	4 hr @ 60 + 6 hr @ 80	87-92	135-155	7.0-9.0
<b>Araldite® LY 5052 / Aradur® 5052</b>	110-160	14-17	8 hr @ 80	114-122	116-122	8.5-13.4
<b>Araldite® LY 564 / Aradur® 22962</b>	120-180	20-30	15 min @ 120 + 2 hr @ 150	134-150	120-135	9.0-11.0
<b>Araldite® LY 3297 / Aradur® 3298</b>	120-135	18-26	8 hr @ 80	90-96	125-130	7.0-8.2
<b>Araldite® LY 3297 / Aradur® 3299</b>	40-50	10-16	8 hr @ 80	94-100	123-128	9.0-12.0
<b>Resin XB 3585 / Hardener XB 3403</b>	700-950	40-55	8 hr @ 80	79-85	118-132	10.5-12.5
<b>Resin XB 3585 / Hardener XB 3404-1</b>	100-130	10-20	8 hr @ 80	76-84	128-135	8.0-9.5
<b>Resin XB 3585 / Aradur® 3405</b>	30-50	4-11	8 hr @ 80	77-82	140-155	9.0-10.5
<b>Resin XB 3585 / Aradur® 3486</b>	480-580	32-40	5 hr @ 100	100-110	120-130	9.0-12.0

\* IEC 1006, DSC, 10 K/min

### Prepreg systems

Product	Mix Ratio (pbw)	Pot Life 100 ml	Gel Time (Hot Plate) at 120°C (min)	Recommended Cure Schedule (°C)	Tg* (°C)	Flexural Strength ISO 178 (MPa)	Ultimate Flexural Elongation (%)
<b>Araldite® LZ 5021 / Aradur® 5021</b>	100:20	60 days at 23°C	14-17	25 min @ 125 or 20 min @ 140 or 15 min @ 150 or 10 hr @ 100 or 8 hr @ 110	120	118-120	13-16
<b>Araldite® LY 5150 / Aradur® 5021 / Hardener XB 3471</b>	100:12:4	7-9 hr at 30°C	13-19 (after B-stage)	30 min @ 130 or 60 min @ 130 or 30 min @ 140 or 30 min @ 120 + 30 min @ 140	140	148-162	4.8-6.3

\* IEC 1006, DSC, 10 K/min

### Expandable epoxy systems

Product	Accelerator	Mix Ratio (pbw)	Gel Time at 60°C ISO 9396 (min)	Typical Pressing Time at 80°C (min)	Tg* (°C)
<b>Araldite® LY 5054 / Aradur® 5003-1</b>	Foaming agent DY 5054	100:20	8.5-9.5	7.5	125-127
<b>Araldite® LY 5054 / Aradur® 5172-1</b>	Foaming agent DY 5054	100:40	7-8	7	90-95
<b>Araldite® LY 5054 / Aradur® LY 5054</b>	Foaming agent DY 5054	100:40	6-7	6	95-104

\* IEC 1006, DSC, 10 K/min

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