aquabatten

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Engineered to beat all the competition

For decades leading sailors and yachtsmen have relied on **aquabatten**.

Thanks to the unique 'tapered by design' construction, **aquabatten** delivers finer tips with thicker ends - resulting in a maximum form and strength through the batten length.

- Unique layering process reduces the risk of inter-laminar bond failure
- No filaments cut in tapering process - unique laminate construction encapsulated in a multi layer outer casing
- Minimised batten failure - reduces replacement costs
- Construction reduces stress - maximum stress is dissipated along the batten

By manufacturing the product in an advanced bi-directional scrim lay-up, **aquabatten** uses up to 56 laminations which are totally encapsulated; ensuring the inherent strength of the construction is not ground away – which is the case with most other tapered battens. This ensures greater structural integrity, strength and durability.

- Handles torque stress caused by twist, where uni-directional battens fail
- Increased durability and strength when sail is stored or covered
- Epoxy resin composition gives a stronger, hydrophobic batten which keeps the batten at design weight and eliminates loss of strength in the resin
- Battens carefully calculated to a specific EI number (stiffness) for easy product selection

Today, **aquabatten** has been developed to offer the most comprehensive range of widths, lengths and types – designed to suit the very latest sail designs and to continue to offer the very best performance.

In line with market leading sail design software which utilises **FEA** (Flexible Element Analysis), these systems express batten specifications in terms of an **EI** number. Bainbridge has now engineered **aquabatten** to cover a balanced range of **EI** numbers, giving the widest possible range to maximise application of **aquabatten** products in modern sail designs.

Definition of EI:

EI is an expression of the **'Flexural Rigidity'** of a bar – flexural rigidity is simply defined as the resistance offered by a structure while undergoing bending.

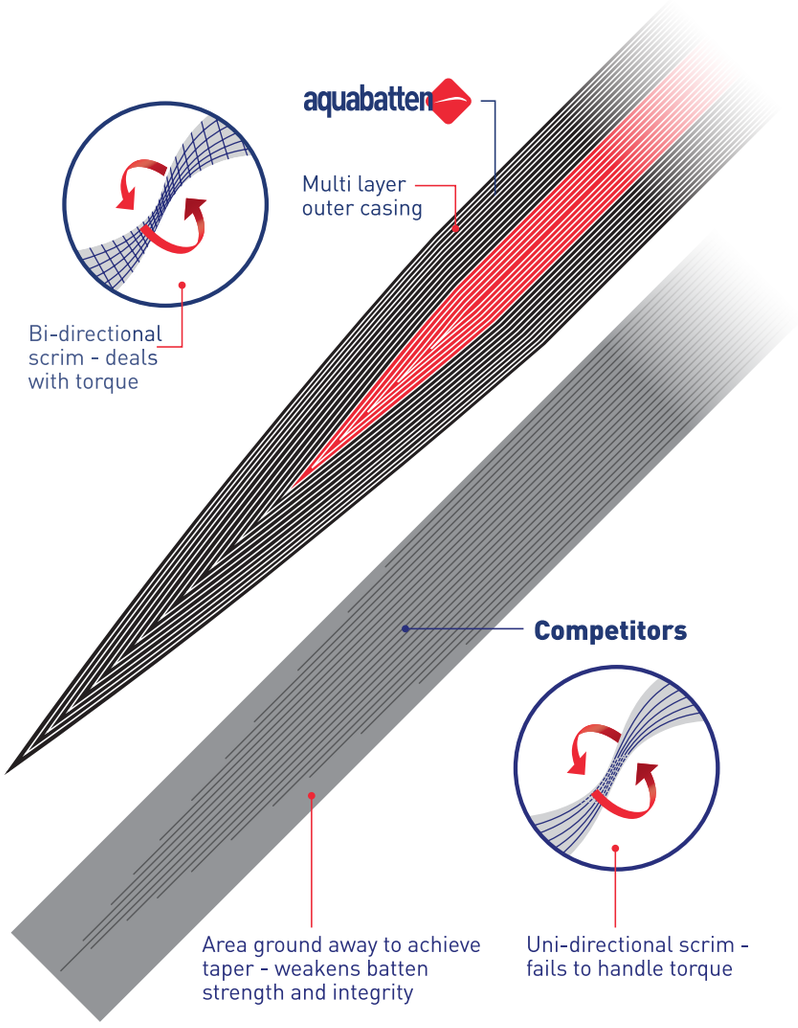
Understanding EI:

E = the stiffness of the material (Youngs Modulus)

I = the stiffness of the shape (form) itself

Therefore EI is the combination of the material and the shape. In combining the two together (**EI**) it delivers a **'common comparator'** which allows you to technically specify the correct batten for that particular part of the sail construction

The higher the **EI**, the 'stiffer' the batten will be.
By using **EI** a sail maker has the flexibility of reducing the width of a batten by increasing the thickness, this enables lighter battens to be specified in the sail design
- resulting in a lower weight sail delivering improved performance.



PART NUMBER BREAKDOWN

Available widths - yy
10 15 20 25 30

Tapered Top Profile

End Profile

Laminate	Constant	Thickness Outer	Thickness Tip	Length	Material	Width
L	4	0200	075	xxxx	G	YY

Available lengths - xxxx
300 400 500 600 700 800 1000
1200 1400 1600 1800 2000 2200

Tapered Side Profile

4 = 40%, **0** = 100%

TAPERED	Length of Max Thickness %	Thickness Outer mm	Thickness Tip mm	EI Numbers for Width yy - mm 10	15	20	25	30
L40200075xxxxGyy	40	2.00	0.75	0.2	0.3			
L40250075xxxxGyy	40	2.50	0.75	0.4	0.6	0.8		
L40300075xxxxGyy	40	3.00	0.75	0.7	1	1.3	1.7	
L40350075xxxxGyy	40	3.50	0.75	1	1.6	2	3	
L40400100xxxxGyy	40	4.00	1.00	1.5	2.3	3	4	5
L40500100xxxxGyy	40	5.00	1.00	3	5	6	8	9
L40600100xxxxGyy	40	6.00	1.00	5	8	10	13	16
L40700125xxxxGyy	40	7.00	1.25		12	17	21	25
L40800125xxxxGyy	40	8.00	1.25		19	25	31	37
L40900125xxxxGyy	40	9.00	1.25		26	35	44	53
L41000175xxxxGyy	40	10.00	1.75			48	60	73
L41050175xxxxGyy	40	10.50	1.75			56	70	84
L41100175xxxxGyy	40	11.00	1.75			64	80	96
L41150200xxxxGyy	40	11.50	2.00				92	110
L41200200xxxxGyy	40	12.00	2.00				104	125
L41300200xxxxGyy	40	13.00	2.00					160
L41400200xxxxGyy	40	14.00	2.00					200

Uniform Side Profile

UNIFORM	Length of Max Thickness %	Thickness Outer mm	Thickness Tip mm	EI Numbers for Width yy - mm 10	15	20	25	30
L00200200xxxxGyy	100	2.00	2.00	0.2	0.3			
L00250250xxxxGyy	100	2.50	2.50	0.4	0.6	0.8		
L00300300xxxxGyy	100	3.00	3.00	0.7	1	1.3	1.7	
L00350350xxxxGyy	100	3.50	3.50	1	1.6	2	3	
L00400400xxxxGyy	100	4.00	4.00	1.5	2.3	3	4	5
L00500500xxxxGyy	100	5.00	5.00	3	5	6	8	9
L00600600xxxxGyy	100	6.00	6.00	5	8	10	13	16
L00700700xxxxGyy	100	7.00	7.00		12	17	21	25
L00800800xxxxGyy	100	8.00	8.00		19	25	31	37
L00900900xxxxGyy	100	9.00	9.00		26	35	44	53
L01001000xxxxGyy	100	10.00	10.00			48	60	73
L01051050xxxxGyy	100	10.50	10.50			56	70	84
L01101100xxxxGyy	100	11.00	11.00			64	80	96
L01151150xxxxGyy	100	11.50	11.50				92	110
L01201200xxxxGyy	100	12.00	12.00				104	125
L01301300xxxxGyy	100	13.00	13.00					160
L01401400xxxxGyy	100	14.00	14.00					200

All sizes are in millimetres. EI calculated and tested by the 3 point method. EI calculated at stiffest part.

Application table

	LOA Feet	Roach Profile	Batten Top	Batten Upper Middle	Batten Lower Middle	Batten Lower
Main	12.50	IMS/IRC	L00300300xxxxG10	L40200075xxxxG10	L40200075xxxxG10	L40250075xxxxG10
Main	15.00	IMS/IRC	L00300300xxxxG10	L40250075xxxxG10	L40300075xxxxG10	L40300075xxxxG10
Main	20.00	IMS/IRC	L00300300xxxxG10	L40350075xxxxG10	L40400100xxxxG10	L40400100xxxxG10
Main	25.00	IMS/IRC	L00350350xxxxG15	L40400100xxxxG15	L40500100xxxxG15	L40500100xxxxG15
Main	30.00	IMS/IRC	L00400400xxxxG15	L40600100xxxxG15	L40600100xxxxG15	L40700125xxxxG15
Main	35.00	IMS/IRC	L00600600xxxxG15	L40700125xxxxG15	L40800125xxxxG15	L40800125xxxxG15
Main	40.00	IMS/IRC	L00600600xxxxG20	L40700125xxxxG20	L40800125xxxxG20	L40900125xxxxG20
Main	45.00	IMS/IRC	L00700700xxxxG20	L40900125xxxxG20	L41000175xxxxG20	L41050175xxxxG20
Main	50.00	IMS/IRC	L00800800xxxxG25	L40900125xxxxG25	L41050175xxxxG25	L41100175xxxxG25
Main	55.00	IMS/IRC	L00800800xxxxG30	L41000175xxxxG30	L41100175xxxxG30	L41150200xxxxG30
Main	60.00	IMS/IRC	L00900900xxxxG30	L41100175xxxxG30	L41300200xxxxG30	L41400200xxxxG30
Jib	12.50	Straight	L00200200xxxxG10	L40200075xxxxG10	L40200075xxxxG10	L40200075xxxxG10
Jib	15.00	Straight	L00200200xxxxG10	L40200075xxxxG10	L40200075xxxxG10	L40200075xxxxG10
Jib	20.00	Straight	L00200200xxxxG10	L40200075xxxxG10	L40250075xxxxG10	L40300075xxxxG10
Jib	25.00	Straight	L00200200xxxxG10	L40300075xxxxG10	L40350075xxxxG10	L40400100xxxxG10
Jib	30.00	Straight	L00250250xxxxG10	L40400100xxxxG10	L40500100xxxxG10	L40500100xxxxG10
Jib	35.00	Straight	L00300300xxxxG15	L40400100xxxxG15	L40500100xxxxG15	L40600100xxxxG15
Jib	40.00	Straight	L00350350xxxxG15	L40500100xxxxG15	L40600100xxxxG15	L40700125xxxxG15
Jib	45.00	Straight	L00400400xxxxG15	L40600100xxxxG15	L40700125xxxxG15	L40800125xxxxG15
Jib	50.00	Straight	L00400400xxxxG20	L40600100xxxxG20	L40700125xxxxG20	L40900125xxxxG20
Jib	55.00	Straight	L00500500xxxxG20	L40700125xxxxG20	L40800125xxxxG20	L41000175xxxxG20
Jib	60.00	Straight	L00600600xxxxG20	L40800125xxxxG20	L40900125xxxxG20	L41100175xxxxG20

Part number conversion table - yy = width in mm

Old Part Number	New Part Number
CRUISER SOFT NOSE	
yyCSN0400	L402500750400Gyy
yyCSN0500	L403000750500Gyy
yyCSN0600	L403500750600Gyy
yyCSN0700	L404001000700Gyy
yyCSN0800	L405001000800Gyy
yyCSN0900	L405001000900Gyy
yyCSN1000	L406001001000Gyy
yyCSN1200	L406001001200Gyy
yyCSN1400	L407001251400Gyy
yyCSN1600	L407001251600Gyy
yyCSN1800	L408001251800Gyy
CRUISER SPECIAL	
yyCSP0500	L403000750500Gyy
yyCSP0600	L403500750600Gyy
yyCSP0700	L405001000700Gyy
yyCSP0800	L405001000800Gyy
yyCSP0900	L405001000900Gyy
yyCSP1000	L406001001000Gyy
yyCSP1200	L406001001200Gyy
yyCSP1600	L407001251600Gyy
yyCSP1800	L408001251800Gyy
yyCSP2000	L408001252000Gyy
yyCSP2200	L408001252200Gyy

Old Part Number	New Part Number
CRUISER STIFF	
yyCST0800	L405002000800Gyy
yyCST0900	L405002000900Gyy
yyCST1000	L405002001000Gyy
yyCST1800	L406005001800Gyy
yyCST2000	L406005002000Gyy
DINGHY	
yyD0300	L402000750300Gyy
yyD0400	L402500750400Gyy
yyD0500	L403000750500Gyy
yyD0600	L403500750600Gyy
yyD0700	L405001000700Gyy
yyD0800	L405001000800Gyy
yyD0900	L405001000900Gyy
yyD1000	L406001001000Gyy
yyD1200	L406001001200Gyy
yyD1400	L407001251400Gyy
yyD1600	L407001251600Gyy
yyD1800	L408001251800Gyy
yyD2000	L408001252000Gyy
DINGHY T45	
yyD1400T45	L454003001400Gyy
DINGHY SOFT TIP	

Old Part Number	New Part Number
yyDS0400	L402500750400Gyy
yyDS0500	L403000750500Gyy
yyDS0600	L403500750600Gyy
yyDS0700	L404001000700Gyy
yyDS0800	L405001000800Gyy
yyDS0900	L405001000900Gyy
yyDS1000	L406001001000Gyy
yyDS1200	L406001001200Gyy
yyDS1400	L407001251400Gyy
DINGHY JIB BATTENS - 10 or 15mm	
yyCSOJ2000	L001001002000Gyy
yyCSTJ2000	L002002002000Gyy
yyCXSTJ2000	L003003002000Gyy
PRO MEDIUM	
yyPro0600S1	L404001000600Gyy
yyPro1000S1	L407001251000Gyy
PRO STIFF	
yyPro0600S3	L405001000600Gyy
yyPro0800S3	L406001000800Gyy
yyPro1000S3	L407001251000Gyy
yyPro1200S3	L408001251200Gyy
yyPro1400S3	L408001251400Gyy
yyPro1500S3	L408001251500Gyy
PRO STIFF continued...	

Old Part Number	New Part Number
yyPro1600S3	L409001251600Gyy
yyPro1800S3	L409001251800Gyy
yyPro2000S3	L409001252000Gyy
yyPro2200S3	L410501752200Gyy
PRO EXTRA STIFF	
yyPro0800S5	L407001250800Gyy
yyPro0600S5	L405001000600Gyy
yyPro1200S5	L409001251200Gyy
yyPro1400S5	L409001251400Gyy
yyPro1500S5	L409001251500Gyy
yyPro1600S5	L410001751600Gyy
yyPro1800S5	L410001751800Gyy
yyPro2000S5	L410001752000Gyy
yyPro2200S5	L410501752200Gyy
PRO SUPER STIFF	
yyPro1200S7	L409001251200Gyy
yyPro1800S7	L411001751800Gyy
yyPro2000S7	L411502002000Gyy
yyPro2200S7	L411502002200Gyy
yyPro1500S7	L410501751500Gyy
yyPro1600S7	L411001751600Gyy

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