X-35 International OD Class

MINUTE
Special International Board Meeting
by email
from 10th April 2014 to 9th May 2014

Countries	2013 Members	Votes
Denmark	4	2
Holland	8	3
Italy	14	3
Japan	9	3
Norway	11	3
Sweden	14	3
X-Yachts		3

Total voting right 20

Special International Board Meeting summoned by Italian Class on indication of the previous AGM Dusseldorf 2014.

Expressed votes from the national class - none
Votes expressed by X-Yachts- none
Votes expressed by Italian National Class- three

Minimum amount of voting rights was not reached, none of the points on the Agenda could be approved since only Italian Class has voted.

Alessandro Solerio
Chairman of board X-35 International Class
Pro-tempore Chairman of board X-35 Italian National Class

X-35 International OD Class

AGENDA
Special International Board Meeting
by email
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1. COSTITUTION OF APPROVAL PANEL (Class rule C.2.5)

"*The Panel shall comprise at least 4 Owners nominated by at least 3 National Class Associations together with the Chairman of ICA*."

X-35 International Class has to elect the Approval Panel.

Candidates

Italian National Class has nominated 2 Owners:
Ms. Malilli Balbo Marsaglia, owner hull 59 since April 2006, not helmsman.
Mr. Paolo Sena, owner hull 190 since end of 2012, not helmsman.

..... National Class has nominated _ Owner(s):

..... National Class has nominated _ Owner(s):

Every candidate must have at least 15 votes to enter in Approval Panel (See Constitution 11.2)

2. Proposal for Class rules A.11 A.13

See Appendix 1 Suggestions for class rules A.11 A.13.

Changes must have at least 15 votes (See Constitution 11.2)

3. Proposal for Class rules D.2.3 E.2.3 D.2.7.1 and Appendix H8

See Appendix 1 Suggestions to class rules D.2.3 E.2.3 D.2.7.1 and Appendix H8

Changes must have at least 15 votes (See Constitution 11.2)

4. Proposal for Class rules C.2.1 C.4.1.2

See Appendix 1 Suggestions to class rules ***C.2.1 C.4.1.2***

Changes must have at least 15 votes (See Constitution 11.2)

5. Proposal for changing Appendix H4 and solutions regarding vertical templates 1412 -300 issues.

Please refer to the attached document (*X-35 templates principles.pdf*) highlighting the main problems concerning actual measurements with templates. Appendix H4 modified by Niels Ditmar in August 2011, introducing principles for the utilization of vertical templates, needs to be approved.

5.a. approval of new appendix H4

Regarding vertical templates 1412-300 you're asked to vote one or both of the following solutions

5b. modification of the existing template

5.c. complete substitution of existing template

Changes must have at least 15 votes (See Constitution 11.2)

6. Proposal for Constitution 9.1 (a)

Proposal in Agenda since AGM Copenhagen January 2012. in put on to-do list to change the Constitution concerning point 9.1, where it is stated:

9.1(a) One (1) Chairman who will be the Board Member from the country in which the World Championship will be held that year.

Suggestions is to substitute 9.1(a) text with the following new text:

9.1(a) One (1) Chairman elected by the International Board for a 2-year period, for a maximum of 2 terms. The election will be validated only by at least a 75% of voting rights.

Changes must have at least 15 votes (See Constitution 11.2)

7. Proposal for Constitution 12.1

Proposal from X-Yachts to change the number of X-Yachts technical committee members from two to one. The request is to change the constitution concerning point 12.1, where it is stated:

12.1 The International Association will appoint a Technical Committee consisting of:
(a) Class Chief Measurer (appointed by the International Board)
(b) X-Yachts International Board member
(c) X-Yachts technical representative
(d) Chairman of International Board

Suggestions is to substitute 12.1 text with the following new text:

12.1 The International Association will appoint a Technical Committee consisting of:
(a) Class Chief Measurer (appointed by the International Board)
(b) X-Yachts International Board member
(c) Chairman of International Board

Changes must have at least 15 votes (See Constitution 11.2)

Alessandro Solerio
Chairman of board X-35 International Class
Pro-tempore Chairman of board X-35 Italian National Class

X-35 International Class
Special International Board Meeting
by email
from 10th April 2014 to 9th May 2014
Appendix 1
X-35 Rules A.11 A.13 D.2.3, E.2.3, D.7.1, C.2.1, C.4.1-2
Appendix H8

Red print shows the necessary changes proposed in order to solve problems, contradictions and missing upgrades regarding the following rules.

Rules A.11 A.13

Reasons for required change:
The Certification Authority is X-Yachts A/S.
The Hull Certificate is the Declaration of Conformity (see in attachment 192's hull certificate after recertification process July 2011).

Some items of the X-35 Rules A.11 A.13 D.2.3, E.2.3 are not applicable to the hull certificate.

A.11 HULL CERTIFICATION

A.11.1 A **certificate** shall record the following information:

(a) Class
(b) X-Yachts A/S ~~and the Danish sailing federation (DS)~~
~~(c) Sail number issued by the **certification authority**~~
~~(d) Owner~~
(e) **Hull** identification
(f) Builder/Manufacturers details
~~(g) Date of issue of initial **certificate**~~
(h) Date of issue of **certificate**

A.13 VALIDITY OF CERTIFICATE

A.13.1 A **hull certificate** becomes invalid upon:

(a) significant repair or replacement to the **hull**, **keel**, **rudder** or **spar** and the change to any items recorded on the **hull certificate** as required under A.11.
(b) the date of expiry
(c) withdrawal by the **certification authority**
(d) the issue of a new **certificate**
~~(e) change of ownership~~

Rules D.2.3, E.2.3

Reasons for required change:
The rules D.2.3, E.2.3 refer to a certificate. There are two certificates in X-35 rules, the HULL CERTIFICATE and the MEASUREMENT CERTIFICATE X-35 ONE DESIGN APPENDIX H8.

Only the second one is under the responsibility of measurer, but the section for Measurer Report is missing.

D.2.3 MODIFICATIONS, MAINTENANCE AND REPAIR

If any **hull** is modified in any other way than described in Section C an official measurer shall verify ~~on the **certificate**~~ that the external shape is the same as before the repair and that no substantial stiffness, or other, advantage has been gained as a result of the repair. The official measurer shall also describe the details of the repair on the measurement **certificate** Appendix H8.

E.2.3 MODIFICATIONS, MAINTENANCE AND REPAIR

If any **hull appendages** are modified beyond that permitted in Section C an official measurer shall verify ~~on the **certificate**~~ that the external shape is the same as before the repair and that no substantial stiffness, or other, advantage has been gained as a result of the repair. The official measurer shall also describe the details of the repair on the measurement **certificate** Appendix H8.

APPENDIX H8

Reasons for required change:
In the five pages version of Appendix H8, published in the ISAF's website, the page for the sails' second-hand market (change of stickers' ownership) is missing.
There is no space for any measures' report.
Only Page 1 reports hull number.

See in attachment a proposal New Appendix H8

Rule D.7.1 (b)

Reasons for required change:
Point (2) and Appendix H8 are in conflict.
Point (11) might consent unfair installations.

D.7.1 FITTINGS

(b) OPTIONAL

Options listed can be part of the Measurement **Certificate**

(see also Section C5. and appendix H7):

(1) Spray hood deck fittings
~~(2) 2 Cabinets in saloon~~
(3) Cooling compressor
(4) Heating system
(5) Hot water container
(6) Holding tank installation
(7) Radio/CD with loudspeakers
(8) Cockpit loudspeakers
(9) Unrestricted Electronic Instruments
(10) Shower in cockpit
(11) Other permanently mounted equipment such as lee cloth, saltwater system etc. with authorization from technical committee

C.2.1

Reasons for required change:
The Group 2 ISAF Regulation 22 does not exist anymore.
The rules regarding crew replacement have been repeated twice with two different wordings.
Appendix H 10 missing.
Errors in the sub-points list.

C.2.1 LIMITATIONS

(Note the ERS definition of crew includes the helmsman)

(a) The ISAF Sailor classification, Reg 22, shall apply. The **crew** shall consist of no more than 2 persons either unclassified or classified Group 3. All other **crew** shall hold a valid Group 1 ~~or Group 2~~ classification.
Competitors without a current classification, or whose employment circumstances have changed, may apply for a new certificate electronically from the ISAF website www.sailing.org/isafsailor.

(b~~a~~) The crew shall consist of minimum 5 persons.

(c~~b~~) No crew member shall be substituted during an event, unless substitution is authorized by the Race Committee.

(d~~b~~) The crew list may be required by the notice of race for an event. For the World & Continental Championships a copy of the crew list should be sent to the Organising Authority and the ICA not later than two weeks before the start of the event, The crew list form is approved by X-35 ICA ~~contained within appendix H.10.~~

~~(c) At events that requires a crew list the crew may not be substituted without the approval of the Race Committee.~~

C.4.1-2

Reasons for required change:
The ISAF Advertising Code has been changed.

C.4.1 **LIMITATIONS**

Advertising shall only be displayed in accordance with ~~Category C of~~ the ISAF Advertising Code.

C.4.2 In addition to advertising permitted in C 4.1 the Class may request the following:

(a) The **boat** type to be displayed on each side of the coaming as fitted by the builder

(b) The builders name and logo to be displayed on each side of the cabin roof as fitted by the builder

(c) The Class International board may request display of event advertising on the **hull** within ISAF Advertising Code ~~20.3 (d).~~

X-Yachts
WORLD CLASS SINCE 1979

Dichiarazione di conformità per i requisiti di progettazione, costruzione, ed emissione acustica secondo la Direttiva 94/25/CE come emendata dalla Direttiva 44/2003/CE
(da compilarsi a cura del costruttore)

Nome del costruttore: X-Yachts A/S

Indirizzo : Fjordagervej 21

Città: Haderslev **Codice postale:** 6100 **Paese:** Denmark

Nome del Rappresentante Autorizzato (se del caso):

Indirizzo:

Città: **Codice postale:** **Paese:**

Nome dell'Organismo Notificato per la valutazione di progettazione e costruzione (se del caso) IMCI

Indirizzo: Rue Abbé Cuypers 3

Città: Brussels **Codice postale:** 1040 **Paese:** Brussels **Numero di identificazione**: 0609

Se è stato rilasciato il Certificato CE del tipo: numero BXYACHTS021 **Data:** (gg/mm/aa) 09 / 12 / 05

Nome dell'Organismo Notificato per la valutazione dell'emissione acustica (se del caso):

Indirizzo:

Città: **Codice postale:** **Paese:** **Numero di identificazione:**

Modulo usato per la valutazione della costruzione: ☐ **A** ☐ **Aa** ☒ **B+C** ☐ **B+D** ☐ **B+E** ☐ **B+F** ☐ **G** ☐ **H**
Modulo usato per la valutazione dell'emissione acustica: ☒ **A** ☐ **Aa** ☐ **G** ☐ **H**
Altre Direttive Comunitarie applicate:

DESCRIZIONE DELL'UNITÀ

Codice identificativo dell'unità

D	K	X	Y	A	3	5	1	9	1	K	7	0	7

Marca dell'unità: X-Yachts **Tipo o Numero:** X-35 / 192

Tipo di unità:
☒ a vela ☐ a motore
☐ pneumatica
☐ altro (specificare):

Tipo di scafo:
☒ monoscafo ☐ multiscafo
☐ altro (specificare):

Materiale di costruzione:
☐ alluminio, leghe di alluminio ☒ plastica, plastica rinforzata con fibre
☐ Acciaio, leghe di acciaio ☐ legno
☐ altro (specificare):

Categoria di progettazione massima: A☒ **B**☐ **C**☐ **D**☐

Potenza del motore: Max. raccomandata: 20 kW,
Installata: _____ kW (se del caso)

Lunghezza dello scafo L_h: 10,60m Larghezza dello scafo B_h: 3,27m Immersione T: 2,15m

Tipo di propulsione principale:
☒ vele ☐ motore a benzina
☐ motore a gasolio ☐ motore elettrico
☐ remi
☐ altro (specificare):

Tipo di motore:
☐ fuoribordo ☒ entrobordo
☐ z o entrofuoribordo senza scarico integrato
☐ z o entrofuoribordo con scarico integrato
☐ altro (specificare):

Deck
☒ completamente pontato ☐ parzialmente pontato
☐ aperto
☐ altro (specificare):

Questa dichiarazione è rilasciata sotto l'esclusiva responsabilità del costruttore. Io sottoscritto dichiaro sotto la mia personale ed unica responsabilità che l'imbarcazione sopra menzionata è conforme a tutti i requisiti essenziali applicabili nel modo specificato (ed è in conformità con il tipo per il quale è stato rilasciato il sopramenzionato certificato di esame CE del tipo) – cancellare il testo tra parentesi se il certificato di esame CE del tipo non è stato rilasciato).

Nome e funzione: Birger Hansen
(identificazione della persona che ha il potere di firmare per conto del costruttore o del mandatario autorizzato)

Firma e titolo:
(o marcatura equivalente)

X-Yachts WORLD CLASS SINCE 1979
Fjordagervej 21 . 6100 Haderslev . Denmark
Tel +45 74 52 10 22 . Fax +45 74 53 03 97
E-mail info@x-yachts.com . www.x-yachts.com

Data e luogo di emissione: **(giorno/mese/anno) 15 / 07 / 11**

X-Yachts
WORLD CLASS SINCE 1979

Requisiti essenziali (riferimento ai relativi articoli degli annessi IA & IC della Direttiva)	Standards	Altro documento normativo/metodi	Fascicolo tecnico	Specificare in dettaglio (*: Norme tecniche mandate)
Requisiti generali (2)	☒			DS/EN ISO 8666:2002 *
Numero identificativo dell'unità – CIN (2.1)	☒			DS/EN ISO 10087:2006 *
Targhetta del costruttore (2.2)	☒	☐	☐	DS/EN ISO 14945:2004
Protezione dalle cadute fuoribordo e mezzi di recupero (2.3)	☒	☐	☐	DS/EN ISO 15085:2003
Visibilità dalla postazione principale di governo (2.4)	☐	☐	☐	NA
Manuale del proprietario (2.5)	☒	☐	☐	DS/EN ISO 10240:2004
Resistenza e requisiti strutturali (3)				
Struttura (3.1)	☐	☒	☐	ABS
Stabilità e Bordo libero (3.2)	☒	☐	☐	DS/EN ISO 12217-2:2002
Galleggiabilità (3.3)	☒	☐	☐	DS/EN ISO 12217-2:2002
Aperture in scafo, ponte e sovrastrutture (3.4)	☒	☐	☐	DS/EN ISO 12216:2002 / DS/EN ISO 9093-1:1998 &2:2002
Allagamento (3.5)	☒	☐	☐	DS/EN ISO 11812:2002 / 12216 / 12217-2 / 15083:2003
Massima portata raccomandata dal costruttore (3.6)	☒	☐	☐	DS/EN ISO 14946:2001
Alloggiamento zattere di salvataggio (3.7)	☐	☒	☐	RSG
Evacuazione (3.8)	☒	☐	☐	DS/EN ISO 9094-1:2003&2:2002 / DS/EN ISO 12216
Ancoraggio, ormeggio e rimorchio (3.9)	☒	☐	☐	DS/EN ISO 15084:2003
Caratteristiche di manovra (4)	☒	☐	☐	DS/EN ISO 8665:1995 / DS/EN ISO 10240:2004
Motori e vani motori (5.1)				
Motore entrobordo (5.1.1)	☒	☐	☐	DS/EN ISO 10088:2001 / 10133:2001 / 9094-1&2 / 16147:2002
Ventilazione (5.1.2)	☐	☐	☐	NA
Parti esposte (5.1.3)	☐	☒	☐	RSG
Avviamento motore fuoribordo (5.1.4)	☐	☐	☐	NA
Impianto carburante (5.2)				
Considerazioni generali – impianto carburante (5.2.1)	☒	☐	☐	DS/EN ISO 10088:2001
Serbatoi carburante (5.2.2)	☐	☒	☐	prEN ISO 21487:2003
Impianti elettrici (5.3)	☒	☐	☐	DS/EN ISO 10133:2001 / 13297:2001 / 9097:1995 / 8849:2003 / 16147:2002 / 18846:1993
Apparati di governo (5.4)				
Considerazioni generali - apparati di governo (5.4.1)	☒	☐	☐	DS/EN ISO 8847:2004 / 28848:1993 / 13929:2001 / 10592:1996
Dispositivi di emergenza (5.4.2)	☐	☒	☐	RSG
Impianto gas (5.5)	☒	☐	☐	DS/EN ISO 10239:2008
Protezione incendio (5.6)				
Considerazioni generali – protenzione incendio (5.6.1)	☒	☐	☐	DS/EN ISO 9094-1:1998 &2:2002
Equipaggiamento antincendio (5.6.2)	☒	☐	☐	DS/EN ISO 9094-1&2
Luci di navigazione (5.7)	☐	☒	☐	COLREGS
Prevenzione scarichi (5.8)	☒	☐	☐	DS/EN ISO 8099:2001
Annesso I.B – Emissioni di gas di scarico	Vedere la Dichiarazione di Conformità del costruttore del motore			
Annex I.C –Emissioni acustiche[1]	☐	☒	☐	Directive 2003/44/EC amending Directive 94/25/EC
Livelli di emissione acustica (I.C.1)	☐	☒	☐	"Froude" number and power displacement under limiting value
Manuale del proprietario (I.C.2)	☒	☐	☐	DS/EN ISO 10240:2004

[1] Da completarsi solo per le unità da diporto con motori entrobordo e entrofuoribordo senza scarico integrato

MEASUREMENT CERTIFICATE

X-35 ONE DESIGN

BUILDER'S DECLARATION
This X-35 did comply with the edition of the X-35 International Class Rules which were valid at the time the yacht was built in respect to the construction manual.

Date:	Builder's representative:

X-35 Hull No:	Year of construction:

OWNER'S DECLARATION
I undertake to race this X-35 only as long as I maintain it strictly in accordance with the valid class rules.

Date:	Owner's signature:

YACHT'S NAME:	YACHT CLUB:
YACHT'S FIRST SAIL NO:	YACHT'S CURRENT SAIL NO:

OWNER'S NAME:

ADDRESS
Street:
Postal code:
Town:
Country:

AUTHORITY'S CONFIRMATION OF VALIDITY OF THIS CERTICATE

☐ By a representative of the ***REGIONAL/NATIONAL X-35 CLASS ASSOCIATION*** if the yacht has already been measured by an official measurer and got a valid measurement certificate issued by a national authority

OR

☐ By a ***MEASURER APPOINTED BY THE NATIONAL AUTHORITY*** if the yacht has not yet been measured.

I have checked or measured according to the following documents:

A) X-35 Measurement form for yacht's weight (page 3-5)
B) ERS and X-35 International Class Rules PART II

Date:	Signature:

Authority:	Stamp:
Name of the undersigned: Position: ADDRESS Street: Postal code: Town: Country:	

CHANGE OF OWNERSHIP
X-35 ONE DESIGN

NEW OWNER'S NAME: ADDRESS Street: Postal code: Town: Country:
NEW OWNER'S DECLARATION I undertake to race this X-35 only as long as I maintain it strictly in accordance with the valid X-35 Class Rules.

Date:	Owner's signature

NEW OWNER'S NAME: ADDRESS Street: Postal code: Town: Country:
NEW OWNER'S DECLARATION I undertake to race this X-35 only as long as I maintain it strictly in accordance with the valid X-35 Class Rules.

Date:	Owner's signature

NEW OWNER'S NAME: ADDRESS Street: Postal code: Town: Country:
NEW OWNER'S DECLARATION I undertake to race this X-35 only as long as I maintain it strictly in accordance with the valid X-35 Class Rules.

Date:	Owner's signature

MEASUREMENT FORM FOR WEIGHT

X-35 ONE DESIGN

A qualified measurer from the National Sailing Association shall on the X-35 owner's account have the yacht's weight recorded together with the permanently installed equipment.

This measurement form shall be sent to:

Your regional/national X-35 Class Association or the International X-35 Class Association (until your National X-35 Class Association has been set up).

A copy is to be carried on board of your yacht at all times.

OWNER'S NAME:
ADDRESS
Street:
Postal code:
Town:
Country:

Phone:	Mobile phone:

Email:	**Signed by**	
	Measurer	**Owner**
The datum weight of the yacht shall be a minimum of 4490 kg with the standard equipment and the optional equipment acc. to appendix H7 of the international class rule (outlined on page 4/5 of this MEASUREMENT FORM).		
Measurer and owner declare that the recorded items on page 4/5 of this MEASUREMENT FORM have been onboard during measurement		
Water tank shall be empty		
Diesel tank shall be full during weight measurement. **42 kg** shall be deducted from actual weight of yacht		
Position of anchor and anchor warp according to class rules appendix H.9		
Weight of anchor and anchor warp in kg, if not the standard anchor and anchor warp is used:	kg	
Actual weight of yacht in conditions as described above in kg excl. corrector weights:	kg	
Total weight of corrector weights in kg: Weights positioned according to Appendix H6 of class rules	kg	
Actual weight of yacht in conditions as described above including above corrector weight in kg:	kg	

MEASURER'S NAME:
ADDRESS
Street:
Postal code:
Town:
Country:

Phone:	Mobile phone:
Email:	
Date:	Signature:

MEASUREMENT FORM FOR WEIGHT

X-35 ONE DESIGN

Standard equipment included in class weight	Each item listed below must be signed by measurer & owner	
	Measurer	**Owner**
Anchor and anchor warp		
Mast		
Rig		
Boom		
Vang incl strop		
Cunningham incl 3 blocks		
Mainsheet		
3 blocks for mainsheet		
Sheet for "main traveller"		
Reef 1 rope		
Backstay incl blocks		
Haul for genoa cars		
Cunningham		
Mainsail halyard		
Combi halyard STB + Port		
Genoa halyard		
Emergency tiller		
8 blocks at mast collar		
Permanently mounted optional equipment can be included in the class weight	Each item listed below must be signed by measurer & owner if they are part of yachts' class weight requirement	
	Measurer	**Owner**
Hot water installation		
Chart plotter		
Cooling compressor		
Heating system		
Holding tank with fittings		
Radio/CD with speakers		
2 cockpit loudspeakers		
Electronic instrumentation		
Magnetic compass		
Primer		

Antifouling		
Sprayhood fittings permanently mounted		
Autopilot drive		
Shower in cockpit		
Race package excl pole and sheets		
Standard equipment NOT part of class weight	Each item listed below must be signed by measurer and owner	
	Measurer	**Owner**
Saloon table		
Loose seat cushions in saloon		
Equipment that is NOT part of class weight	Each item listed below must be signed by measurer & owner	
	Measurer	**Owner**
Spinnaker pole		
Spinnaker sheets		
Spinnaker guy sheets		
Winch handles		
Mooring ropes		
Fenders		
Genoa sheets		
Shore power cable		
Barberhaul ropes		
Downhaul ropes		
Hoiest strop		
Boom cover		
Two cabinet sections in saloon – demountable		
Spare sheets		

MEASURER REPORT .....

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MEASURER REPORT .....

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X-35 ONE DESIGN CHANGE OF OWNERSHIP - SAILS			
PREVIOUS X-35 HULL NO:	**SAIL STICKER NO**	**CHANGE OF OWNERSHIP DATE**	**X-35 ICA CONFIRMATION DATE**

NEW OWNER'S NAME: ..... **X-35 HULL NO:** .....

NEW OWNER'S DECLARATION I declare that I have taken ownership of the above mentioned sails.

Owner's signature .....

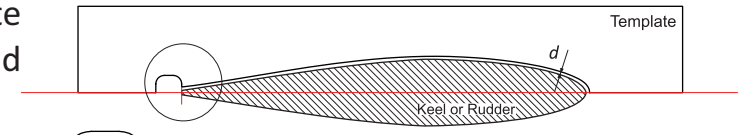
TEMPLATE

Principles, actual knowledge and critical issues

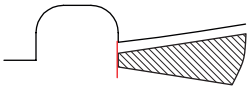
HORIZONTAL TEMPLATE

Class Rule's Appendix H4 (issued on 2006.01.06) describes keel (page 1) and rudder (page 2). position and principle of maximum horizontal template.

The distance *d* between template and keel or rudder surface should be 0 mm ≤ d ≤ 4mm.

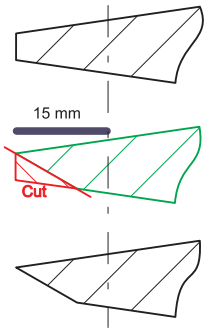


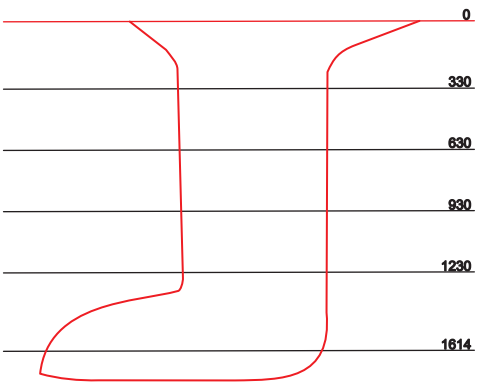
The position is edge of template .



≡ trailing edge of profile

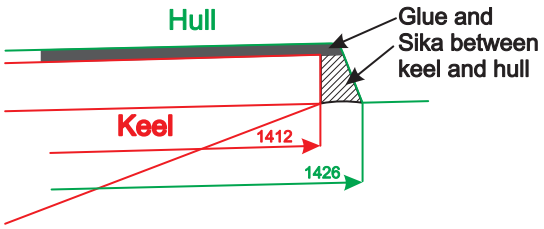
There are not restrictions within 15 mm from the trailing edge.
This principle allows the cutting of the trailing edge, in order to decrease the turbulence when the trailing edge is not thin.





There are five horizontals templates for the keel. Theoretically the levels should be measured from keel's lower part of top plate. However this is not possible in yacht's check. In that case the levels are taken from the hull. Between the hull and the keel's top plate there is an offset of 9.3 mm (from forward to aft).
Below the level of 1614, . no check are required by current version of Appendix H4 (2006.01.06).

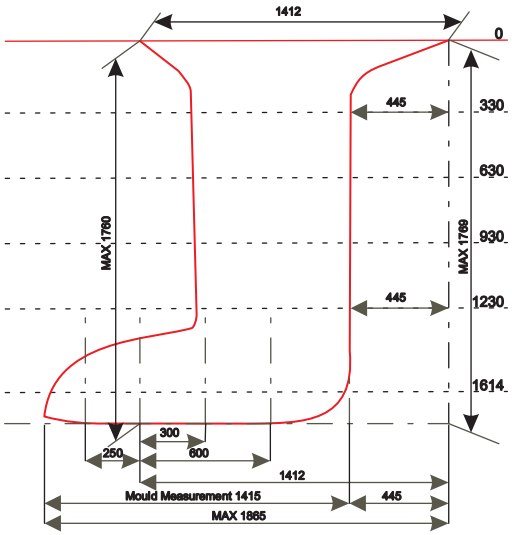
As shown, this is the joint hull keel in X-35. The thickness of glue modifies the level taken from the hull, the Sika makes it difficult to identify the lower forward edge of the top plate.



Many errors are therefore possible, some are systematic (thickness of glue, identification of forward edge) others are methodic (measuring tools). Errors of level are normally greater than errors concerning skew.
It's much simpler to measure the levels on the rudder; errors are in this case normally negligible.
Concerning the application of templates by measurers, there are two major mistakes: identification of the center of the profile and holding the template in right position for verification. The second error is particularly frequent in measuring the keel, since the templates are much longer and heavier. Moreover, the longest template 1614 tends to inflect.

KEEL VERTICAL TEMPLATE

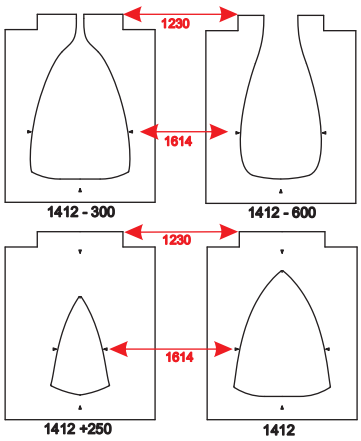
In May 2011 tests on vertical template were started.
The principle of vertical template increases measurer's job quality in identifying the lower forward (aft) edge of the top plate.
The new measures will allow to identify more easily unfair changes, particularly below level 1614.

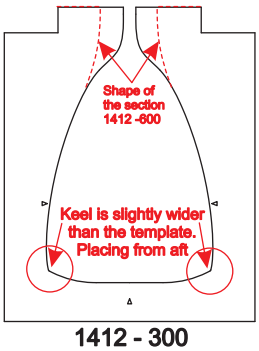


X-35 OD Keel Max Vertical Template

There are four vertical templates.
The upper edge of every vertical template is horizontal level 1230. On the template horizontal level 1614 and vertical center of template are marked.

The reference position is the lower aft edge of the top plate. The template 1412 - 600 should be inserted from forward, the other from aft.

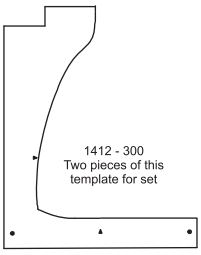




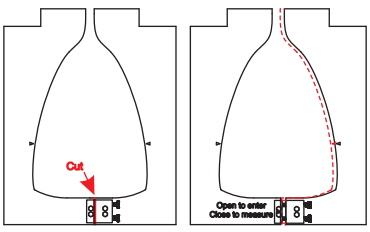
1412 - 300

Unfortunately the lower part of 1412 -300 template is smaller than keel before its final positioning.

So the only chance for placing it is twisting the template and forcing it from forward. That might damage keel's surface and will ruin the template after a few times.



Since 2011, there have been two proposals: one from Niels Ditmar (complete substitution –see left-), the other one by Italian National Class (modifies of the existing template - see right-).



Both solutions envisage to assemble the template after its placement.
It is difficult know which solution is the best without prior testing.

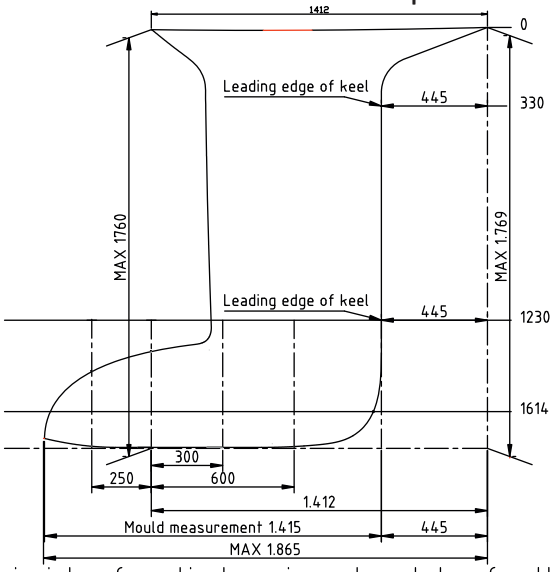
The best choice would be to authorize the modification of the old template and the production of a new set of templates to be tested and then compare the two possible solutions.

Tests have also evidenced horizontal level differences between level assessed by measurements from hull and level determined by vertical templates (depending from glue level between hull and keel). As a consequence Niels Dittmar has introduced a maximum tolerance of 5 mm between the two levels.

We should remember that a difference in horizontal level might be considered relevant with template 1614 and negligible with templates 330-1230.
However it is also true that after correctly using the vertical templates, checks with horizontal template 1614 are not so important and might be neglected.

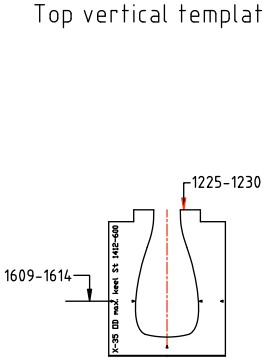
We might conclude that use of vertical templates is highly recommended to guarantee respect of Class rules. In order to correctly use them it is however necessary to:

- undertake tests in order to decide the best solution for template 1412-300
- modify appendix H4 by introducing the principles prepared by Niels Ditmar after 2011 tests.

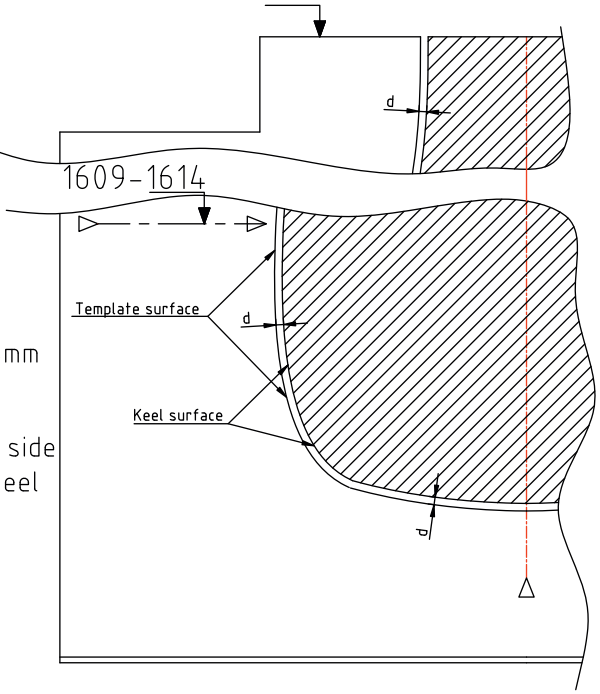


Principle of vertical maximum templates for the X-35 keel

Top vertical templates between level 1225 and 1230



Distance d: 0mm ≤ d ≤ 4mm



The radius between the side and the bottom of the keel must be radius=7 mm on the maximum vertical template in station 1412-300, 1412 and 1412+300 mm

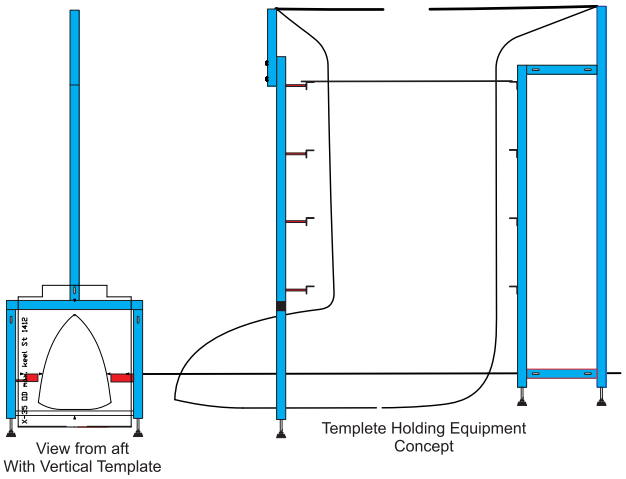
Tools and measurements problems

Since 2010 the use of first experimental Template Holding Equipment and double set of horizontal templates has increased inspections and measurements quality, this methodology has therefore been included as golden standard in Class Events guidelines approved in AGM Nice 2010.

The two existing Template Holding Equipment, one by the Italian Class and the other by the X-35 ICA, appear to be apt to guarantee inspections and measurements for major events. They actually minimize the possibility of errors in the two most critical steps concerning templates' application by measurers: identification of profile center (use of two set of templates) and holding the template in the right position for verification

(Template Holding Equipment used for keel since templates are long and heavy).

During 2011 tests, use of Template Holding Equipment for the keel vertical templates as well has not given the wished results. The best solution for vertical templates would be to study a specific equipment for their application. It seems not difficult to implement.



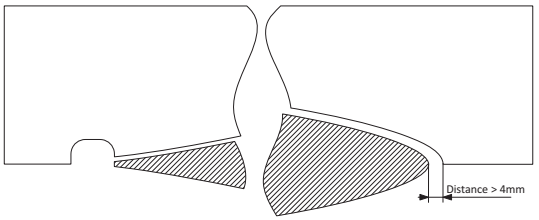
View from aft
With Vertical Template

Templete Holding Equipment
Concept

There are some other problems concerning measurements, such as the problem of shortest keel profiles, that can be solved through proper instructions given to the measurers. Instructions however are not enough without an appropriate practical experience on the field, acquired by working with an experienced measurer.

INSTRUCTION FOR MEAUSURERS
How to manage a keel shorter profile

There's a recurring situation concerning the X-35 keel.
The distance between template surface and keel surface is on both sides abides by the rule (0 ≤ d ≤ 4 mm), however the length of profile results over 4 mm shorter than the length of template.

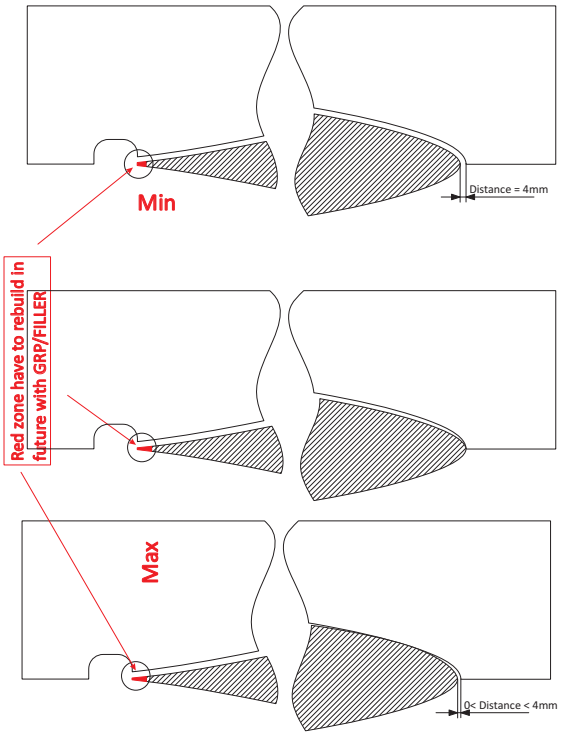


This happens for many reasons, particularly because the end of the profile, made in GRP/FILLER, is very thin and, moreover, a light sanding can easily erase the material.
It's very difficult for the owner to control the length of the profile and to understand when it goes out of the rule.
However this little infraction of the rule does not give an advantage in terms of speed.

The following instructions try to give the **fairest** solution at this particular problem.

If this over distance (shorter over 4 mm than length of template) is less or equal to 15 mm , the measurer has to put the forward trailing edge of template at 4 mm from the forward trailing edge of keel.
If the distance between template surface and keel surface is on both sides abiding by the rule (0 ≤ d ≤ 4 mm), the measurer will give permission for racing. Since only the length of keel profile would result out of rule (fair solution at the problem).

The measurer will then try to transpose the template back until the forward trailing edge of the template touches the forward trailing edge of the keel or also until the template's surface and keel's surface will coincide at a given point..



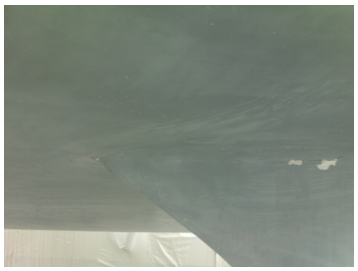
This way the measurer has the correct information to give accurate instructions to the owner for future work in aft edge of keel in order to correct this little infringment of the rule. The boat's owner and any other person in charge shall insure to execute this work at the first possible opportunity.

INSTRUCTION FOR MEAUSURERS
Further Check

Checks to be undertaken by measurers when the boat is out of water, besides those of keel and rudder templates.

A) Junction between Keel and Hull

Antifouling has to be normally slightly cracked on this area. This happens because the joint (Sika) is more elastic than the paint. That's why the antifouling paint cracks after a few days of use. If no thin cracks appears, this requires attention: it is possible that the joint has been very recently painted or it is possible that the paint hides an unfair joint.



B) Sail drive check

It is not allowed to have Sika between sail drive and hull.

C) Folding propeller check

REFERENCE: CLASS RULE

D.5.3 FOR USE

(a) MANDATORY

(1) One inboard engine, Yanmar 3 YM20C, 20 HK (14,8 kW) with Yanmar SD20 sail and an X-Yachts A/S approved 2 bladed folding propeller 16”x12.

All the X-35 use a Flex O Fold folding propeller 16”x12 cruising model. Flex O Fold produces also a racing model with a better hydrodynamic performance by comparison to the cruising model. It’s possible with the same hub to change the blade from cruising to racing.

From the website of Flex o Fold “*Due to the flexible design of our propellers, it´s even possible switch blades on the existing hub. Thereby, you can easily put on Racing blades for the regatta, and switch back to standard blades when going for a two weeks cruise with the family. The Flexofold 2-blade Racing folding propeller for Saildrive - available for shaft too. Folded for low draft and minimum risk of catching lines or seaweed the racing propeller has 20 to 30% less drag than the Standard Flexofold 2-blade.*”

X-35 rules are **closed class rules**. The measurer should verify the folding propeller.

D) Ring between rudder and hull.

The ring between rudder and hull must have the following dimension: Ø 94 mm out / Ø 68,5 mm in thickness 4,5 mm. The ring shouldn't be attached either to the hull or to the rudder but has to be free to move.

E) Checking unfair material on the rudder

After a careful eye examination of rudder installation, under, above and inside the boat, it is possible, with a simple and cheap tool, normally called cable finder (available in hardware shops) to verify, through comparison to other rudders, if unfair material has been used on the rudder undergoing check.