SELF-CERTIFIER-12215-5 TUTORIALS FOR METAL

3

4

5

6
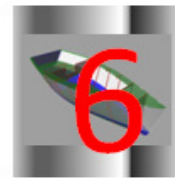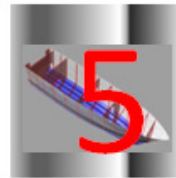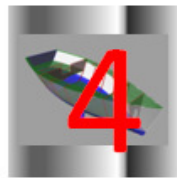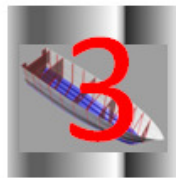
MODULE's 3-6

Tutorials are supplied by ICOMIA as an aid to users and do not constitute part of the software

TUTORIAL No.1- LEARNING THE BASICS

APPLICABLE TO MODULE:	ALL
USER PROFILE:	First time users who have reviewed ISO-12215-5
PREREQUISTES:	- Any of the 6 modules - PC running Excel 2007 or Excel 2010 - Possession of a legal copy of ISO-12215-5

TERMS & CONDITIONS

1. The user should make reference to the official ISO standard 12215-5 when using this spreadsheet. It is ABSOLUTELY ESSENTIAL that users should read and understand the inherent limitations of ISO-12215-5 as spelt out in the 'Introduction' and 'Scope' sections of said standard.

WARRENTY DISCLAIMER

2. This software has been developed by the International Council of Marine Industry Associations (ICOMIA), the International Marine Certification Institute (IMCI) and Southampton Solent University. The SOFTWARE is supplied "AS IS". ICOMIA, IMCI or SSU disclaims all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The user must assume the entire risk of using the SOFTWARE.

SOFTWARE VALIDATION

3. While all reasonable efforts have been made to validate the software against the standard the responsibility for checking the software against the standard prior to any commercial application rests solely with the user.

PURCHASE OF ISO-12215-5 (hard copy) STANDARD

4. SELF-CERTIFIER-12215-5 is a calculation tool and is distributed free of charge to anybody who has purchased the hard copy of ISO-12215-5 either from ISO or from its member bodies. The use of this program by anybody who does not own an authorised copy of the standard is strictly forbidden.

➢ This symbol and text means this is an action (e.g. click with mouse) that you should do. If you do not see this symbol then it is a note for you to read.

STEP 1

You need to have downloaded the Module of your choice (as indicated by the large red number) from the ISO website.

➢ Go to the directory where you have stored your module and double click on the icon with your mouse

➢ The program will start with a copy of the terms and conditions (as seen on page 1) which you must accept in order for the program to load up. This will only happen when you run the program for the first time

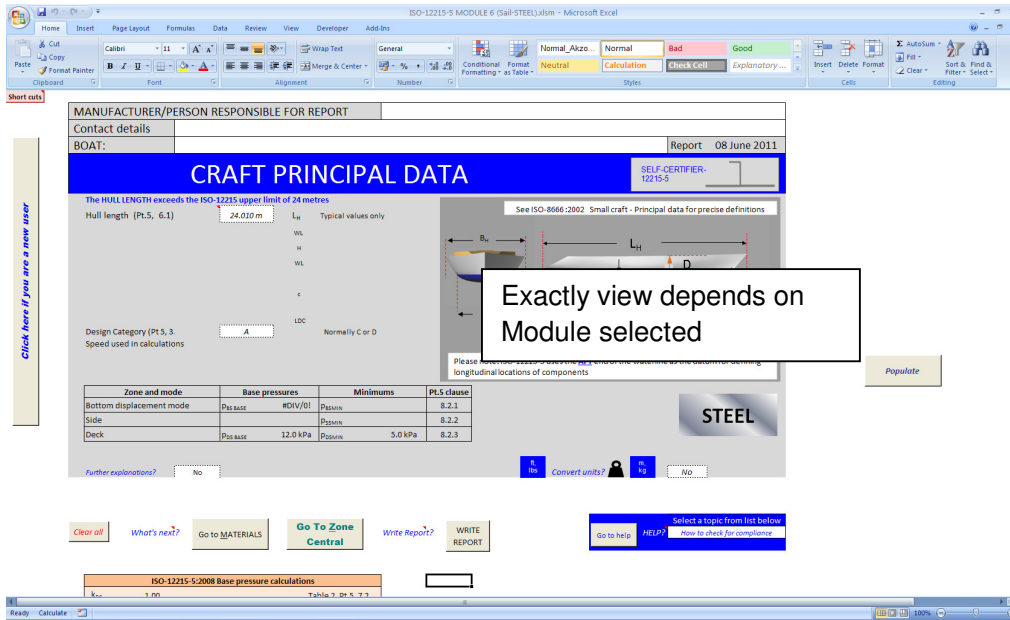> You will then see a 'splash-screen'. This will appear every time you run the program and will disappear after a few seconds

ISO-12215-5 Self-Certification Checker

MODULE 3
(Aluminium-MOTOR)

Welded construction ONLY

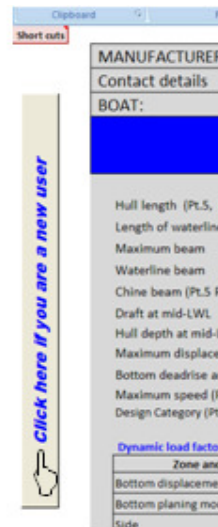## STEP 2

You will then see this screen. Your screen will look similar but may not be exactly the same.

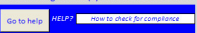This is the screen you will see every time you start up the program. It's where you enter the CRAFT PRINCIPAL DATA, for example, Hull length, speed, design category etc.

> Move the mouse over the button *'Click here if you are a new user'* as indicated. You may see the mouse cursor change to a hand or other symbol which indicates an active button

> Click the left button on the mouse

STEP 3

Having arrived at this screen you now need to follow the seven steps indicated.

➢ Follow the 7 steps on NEW USER- BASIC OPERATION not forgetting to do view the 'Map' and returning to Principal Dimensions to review ALL the Help sheets. If you don't do this NOW it will cost you time later on.

End of Tutorial 1

TUTORIAL No.2 - Exploring the limits

APPLICABLE TO MODULE:	ALL		
USER PROFILE:	First time users who have reviewed ISO-12215-5		
PREREQUISTES:	- Any of the 6 modules - PC running Excel 2007 or Excel 2010 - Possession of a legal copy of ISO-12215-5 - **COMPLETION OF TUTORIAL No.1**		

> This symbol and text means this is an action (e.g. click with mouse) that you should do. If you do not see this symbol then it is a note for you to read.

STEP 1

> Launch the module of your choice (SEE Tutorial No.1)

Notice that you are faced with a empty sheet, i.e. no boat has been defined. There is also a warning message 'The HULL LENGTH is below the ISO-12215 lower limit of 2.5 metres'.

No surprise there – no boat is defined so the program thinks the hull length is 0 metres.

STEP 2

> Set the Design category to A or B or C and then enter 16m in the Hull Length white box (remember you can use the TAB key on very left of keyboard to move around the white data entry cells).

Note the message which appears just above the 16m.

> Now go to the bottom and change the design category to D

The message has disappeared!

STEP 3

➢ Change the design category to A and the hull length to 12.00

There is no warning now.

STEP 4

➢ Change the hull length to 24.01

Now not only is there a warning but most of the data input boxes have disappeared again.

THIS ALL MEANS:

➢ ISO-12215 is not valid for hull lengths of greater than 24m. The program should not be used.

➢ For design category A, B and C self-certification normally applies only up to 12m hull length

➢ For design category D self-certification normally applies up to 24m hull length

HOWEVER with the exception of the 24m hull length limit you can ignore these warning messages and the program will still give answers, but IF you do you are straying off scope of ISO-12215-5.

SELF-CERTIFIER-12215-5 is intended as an aid to builders wishing to self-certify existing craft, i.e. without the assistance of a notified body or perhaps even a qualified structural engineer.

This is fine provided you observe some golden rules:

1. Do not ignore the limits even if these are only advisory

2. Do not try to use the program to design down to compliance factors of 1 (see Tutorial No.1 and help topics for an explanation of compliance factors)

STEP 5

➢ Find the scroll bars. Uses these to see the full display (only necessary if you are working with a screen which is not set up to show the whole display)
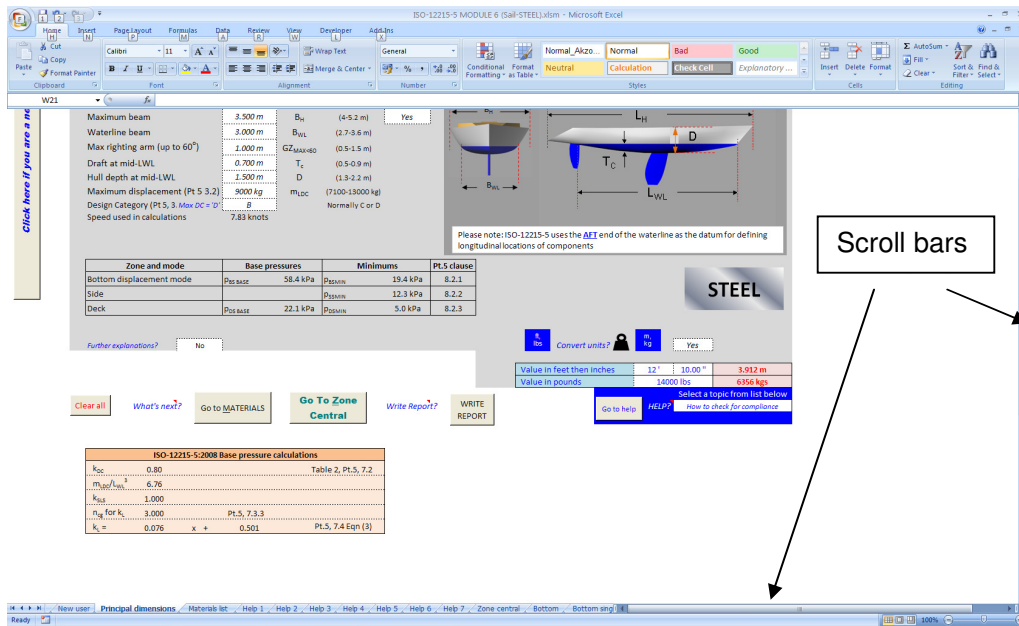
Scroll bars

STEP 6

> Find the grey button with 'Populate' on it. It's on the far right hand side (use the scroll bars if necessary).

Populate

There will be more discussion on this in tutorial 5. Just click on it for now and notice that the principal dimensions are populated. We are going to now try some of the further limits.

> In the appropriate box change the length on waterline to be greater than the hull length and the waterline beam to be greater than the maximum beam. Make the depth less than the draft. This is stupid, right!

Notice what happens. **Absolutely nothing**!

SELF-CERTIFIER-12215-5 does not do your thinking for you. Although it does take some of the pain out of the calculations, it has limited checks on inappropriate data.

You might want to select 'yes' if not already selected on the see typicals' dropdown white cell. This should prevent data entry error but remember it is only intended to be guidance.

STEP 7

> Make deadrise 40 degrees and the speed 60 knots (motor only) and enter the displacement in tonnes, say 12.

Notice what happens. **This time you get a warning**!

While every effort has been made to validate the software, YOU are responsible for ensuring that the program is fit for purpose. SELF-CERTIFIER-12215-5 is totally transparent in that it shows all the intermediate calculations. You cannot turn these off, although they do not usually appear in the

hard copy of any scantling report you may wish to create. You should review these from time to time against the formulae given in the ISO standard.

SUMMARY OF LIMITATIONS

The purpose of Tutorial No. 2 was to indicate the kinds of limitations which are associated with using SELF-CERTIFIER-12215-5. There are three types:

1. 'No-go' limitations (i.e. outside scope of ISO-12215-5) – don't use SELF-CERTIFIER-12215-5 for hull lengths greater than 24m or speeds greater than 50 knots for motor.

2. Advisory limitations – used within the advisory limits for checking of craft which have proven to be satisfactory in service, SELF-CERTIFIER-12215-5 can be used with confidence. Anything remotely unconventional will require the services of a qualified structural engineer. This is an assessment tool for practical people who are expected to marry their extensive experience with what the computer is telling them. It should NOT be used by people with very limited experience of the type of craft being assessed

3. QUALITY INPUT IS EVERYTHING – the biggest bug in any computer program _can_ be the person sitting in front of the screen. Rubbish data in = rubbish answers out. So take your time. Read the help sheets (see Tutorial No.1) get your plans together and make sure you are happy with the basic concepts (again see help sheets). If you get stuck while there is no formal technical support contact ICOMIA – they may be able to help
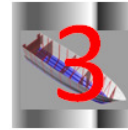
End of Tutorial No.2

TUTORIAL No.3 – METAL CRAFT

APPLICABLE TO MODULE:	Module 3-6 only
USER PROFILE:	First time users who have reviewed ISO-12215-5
PREREQUISTES:	- Module 3-6 - PC running Excel 2007 or Excel 2010 - Possession of a legal copy of ISO-12215-5 - **COMPLETION OF TUTORIALS 1 & 2**

STEP 1

➢ Double click on the icon with your mouse to launch the module of choice, e.g. module 3

STEP 2

➢ You could enter a hull length and this will reveal the other boxes. <u>This is what you WILL do once you are familiar with the program.</u> For now we will use the 'factory-set' boat which varies with the module you are using. So click the *Populate* button you used in Tutorial 1.

We now have a boat and are ready to go. Incidentally, you can override any of these values if you are not happy. The idea of the factory boat is to give you an indication of typical values – it's for guidance only while you are learning SELF-cERTIFIER-12215-5. Click on *Populate* again to reset.
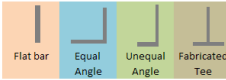
STEP 3

➤ Click on Go to MATERIALS or ctrl _ m and then on the *Populate* button you'll find at the right hand side of this sheet.

Go to MATERIALS

MATERIALS LIST

Hull plating material	Yield Strength (welded)
5083-Al,Mg 4,5, Mn 0,7(H32)	125 MPa
5052-Al,Mg 2,5(H34)	65 MPa
5154A-Al,Mg 3,5(H24)	85 MPa

Hull framing material	Yield Strength (welded)
5083-Al,Mg 4,5, Mn 0,7(O/H111)	125 MPa
6082-Al,Si 1,Mg,Mn(T5,T6)	115 MPa
6061-Al,Mg,Si,Cu(T5,T6)	115 MPa

Flat bar   Equal Angle   Unequal Angle   Fabricated Tee

STIFFENER GEOMETRY

Stiffener type	Geometry definition				Stiffener code	Area (cm^2)	Z$_{NA}$ (cm)	I$_{base}$ (cm^4)	A$_{WEB}$ (cm^2)	t$_{WEB\ MIN}$
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								
None	Total depth	AB thk								

Initially blank. 'Populate' adds typical small boat stiffeners.

➤ Click on the first Stiffener type cell (*not the four pictures in the top right*) (it is light orange). This reveals a colour coded drop down which matches the figures in the top right hand part above the stiffener geometry table. Try each option in turn, note the colour change and the appearance of data entry boxes

There is nothing to stop you entering any data you like in any order but a systematic approach is always the best one to go for, hence you'll see flat bars, equal angles, unequal angles and finally fabricated tee sections. Recommended approach – populate and overwrite as necessary.

You will also want to enter sections which represent your normal build/supplier. The section properties are calculated internally so you don't need to worry about this. Just enter the dimensions in the normal way.

➤ Click on the first cell again and change the type back to flat bar. Now make the thickness 2mm.

Look at the **far right** column. The t$_{WEB\ MIN}$ value has gone from black text on grey to red text on pink. This is because you have specified a web thickness which is too low. Change it back to 4mm.

This is not necessarily a disaster (two sections were already ed on pink (as there is an additional correction factor introduced at a later stage. This is explained in the standard and will not be gone into here.

If you can represent all your boats by the 13 stiffeners allowed in the library you will only need to visit MATERIALS LIST once. You can then go from Principal Dimensions directly to the Zone Central. If not you will just need to amend your standard library as you need to. For now just leave the default stiffener database as it is.

> You might also want to explore the aluminium grades available in modules 3 or 4 (only the three fixed values for steel if you are using modules 5 or 6). Use drop down boxes.

STEP 4

> Go To Zone Central

> Click on Go To Zone Central or ctrl _ z and
> Click on Go to BOTTOM zone
> Then on *Populate* for the factory-set boat panels/stiffeners*

> Go To BOTTOM zone

* Normally this is where you will spend most of your time, picking off panel and stiffener sizes and locations from your construction drawings

Actually you could have gone directly to the bottom zone **from anyway** in the program by holding down the ctrl key and pressing the letter b.

Once you get familiar with the program you may want to use these short cuts but if you only use the program occasionally the click on buttons is probably best.
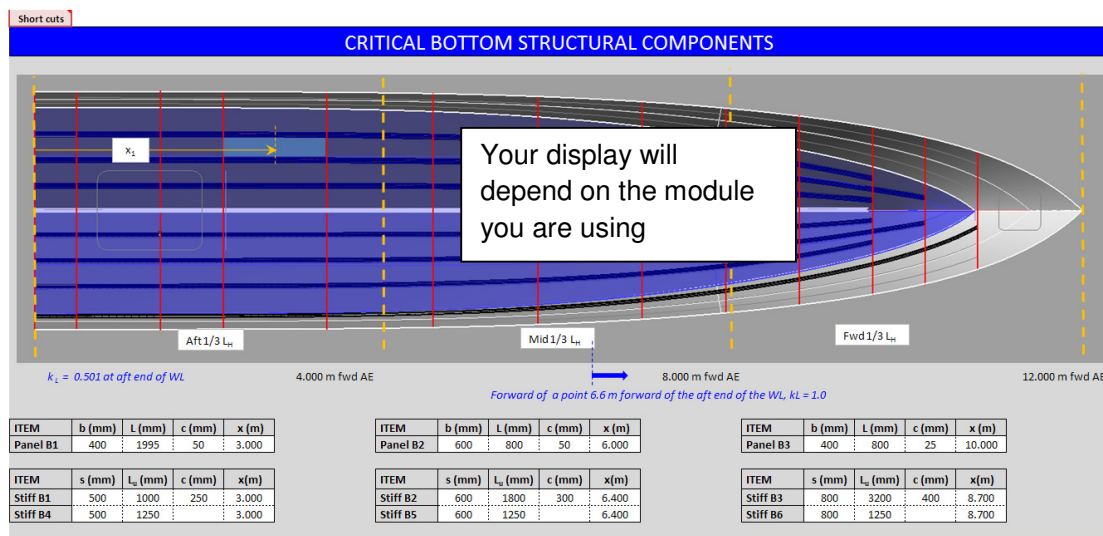
This is where you specify the sizes and locations of the critical panels and stiffeners.

The program looks more restrictive than it is. To give form to the assessment, SELF-CERTIFIER-12215-5 suggests you look at three zones (aft L/3, middle L/3 and forward L/3) looking for the most critical panel and or up to two stiffeners in each.
Design loads tend to be greater in the forebody but then panel sizes and stiffener spans can be larger in the after body (to accommodate engine seats for example).

You could have all your critical structure in the forebody and you may wish to put all 9 bottom components (3 panels, 6 stiffeners) in the forebody zone. However it is recommended that you don't do this. It is easy to overlook components. The recommended approach is to find the WORST (most critical) component in each zone and see how the boat looks. It might be that all components easily comply (compliance factor say 1.5+). In this case the job is done.

If you do want to consider more components it might be better to just make a second copy of the file. For small boats with fairly uniform scantlings you probably won't need to do this.

Warning – you need to be REALLY careful when entering in curvature values. See Tutorial No.1 help sheets for guidance here.

Note – You might find it easier to use stiffeners B1, B2 and B3 as stringer, longitudinals or transverses (secondary members, see ISO-12215-6) and B4-B6 are transverse web frames or girders or other stiffener members (primary members, see ISO-12215-6). You don't HAVE to define all 9 components but this is considered to be good practice for a metal boat.

STEP 5

| Go To Bottom Shell |

➤ Click   on   and *Clear all*

➤ Enter a sensible plating thickness, say 4 or 5mm and select a material from your drop down box.

| Go To BOTTOM zone | BOTTOM SHELL PLATING | Go To BOTTOM zone |

PANEL B1 — Zone Aft 1/3 L

Bottom shell plating thickness	5.00 mm	Yield	125 MPa
Select hull material	5083-Al,Mg 4,5, Mn 0,7(H32)		

ISO-12215-5 REQUIREMENT				
Criterion	Required	Actual	CF	RESULT
Thickness for robustness	3.38 mm	5.00 mm	1.480	PASSES
Thickness to meet strength	3.07 mm	5.00 mm	1.628	PASSES

PANEL B1				
b (mm)	400	L (mm)	1995	k_c
c (mm)	50	x (m)	3.00	0.684
L_{max} (mm)	1000	for A_D	A_D (m²)	0.4
L_{max} (mm)	839.2	for k_2	k_2	0.500
Mode	k_R	k_{AR}	k_L	P_{BM}
Planing	1.000	0.516	0.728	23.08
Displacement	1.380	0.712	0.728	28.36
			P_{BM}	28.36

PANEL B2 — Zone Middle 1/3 L

Bottom shell plating thickness	5.00 mm	Yield	65 MPa
Select hull material	5052-Al,Mg 2,5(H34)		

ISO-12215-5 REQUIREMENT				
Criterion	Required	Actual	CF	RESULT
Thickness for robustness	4.68 mm	5.00 mm	1.067	PASSES
Thickness to meet strength	7.68 mm	5.00 mm	0.651	FAILS

PANEL B2				
b (mm)	600	L (mm)	800	k_c
c (mm)	50	x (m)	6.00	0.823
L_{max} (mm)	800	for A_D	A_D (m²)	0.48
L_{max} (mm)	800	for k_2	k_2	0.421
Mode	k_R	k_{AR}	k_L	P_{BM}
Planing	1.000	0.488	0.955	28.66
Displacement	1.320	0.645	0.955	33.69
			P_{BM}	33.69

PANEL B3 — Zone Forward 1/3 L

Bottom shell plating thickness	5.00 mm	Yield	85 MPa
Select hull material	5154A-Al,Mg 3,5(H24)		

ISO-12215-5 REQUIREMENT				
Criterion	Required	Actual	CF	RESULT
Thickness for robustness	4.10 mm	5.00 mm	1.221	PASSES
Thickness to meet strength	5.87 mm	5.00 mm	0.852	FAILS

PANEL B3				
b (mm)	400	L (mm)	800	k_c
c (mm)	25	x (m)	10.00	0.892
L_{max} (mm)	800	for A_D	A_D (m²)	0.32
L_{max} (mm)	800	for k_2	k_2	0.497
Mode	k_R	k_{AR}	k_L	P_{BM}
Planing	1.000	0.552	1.000	33.90
Displacement	1.380	0.761	1.000	41.67
			P_{BM}	41.67

You may select the plate thickness and aluminium or steel type (created in the MATERIALS LIST).

➤ Study the green or red boxes. These are the 'pass' or 'fail' indicators. If everything is green try putting in a really low thickness and watch the box 'go-red'.

STEP 6

➤ Click on or ctrl + b

| Go To BOTTOM zone |

➤ Click on

| Go To Bottom Stiffeners 1-3 |

Did you notice that there is no underlined letter on this box? There aren't short-cuts for everything. This is done deliberately to provide structure to the program. You are forced to keep returning to the zone you are currently working on.

BOTTOM STIFFENERS No.s 1-3

STIFFENER	B1		Zone	Aft 1/3 L		STIFFENER	B2		Zone	Middle 1/3 L		STIFFENER	B3		Zone	Forward 1/3 L

Plate thickness		5.00 mm	Plating yield strength	125 MPa		Plate thickness		5.00 mm	Plating yield strength	65 MPa		Plate thickness		5.00 mm	Plating yield strength	85 MPa
Attached plating width		300 mm				Attached plating width		300 mm				Attached plating width		300 mm		
Stiffener type and material		75 x 75 x 6 EA		6082-Al,Si 1,Mg,Mn(T5,T6)		Stiffener type and material		50 x 5 FB		6082-Al,Si 1,Mg,Mn(T5,T6)		Stiffener type and material		75 x 75 x 6 EA		6082-Al,Si 1,Mg,Mn(T5,T6)
A (cm²)	8.64	$Z_{NA\,stiff}$ (cm)	5.40	I_{BASE} (cm⁴)	299.12	A (cm²)	2.50	$Z_{NA\,stiff}$ (cm)	2.50	I_{BASE} (cm⁴)	20.83	A (cm²)	8.64	$Z_{NA\,stiff}$ (cm)	5.40	I_{BASE} (cm⁴)	299.12
A_w (cm²)	4.14	$Z_{NA\,both}$ (cm)	1.82	I_{NA} (cm⁴)	222.40	A_w (cm²)	2.50	$Z_{NA\,both}$ (cm)	0.14	I_{NA} (cm⁴)	21.73	A_w (cm²)	4.14	$Z_{NA\,both}$ (cm)	1.82	I_{NA} (cm⁴)	222.40
Total depth of stiffener		75.0 mm	Stiffener yield strength	115 MPa		Total depth of stiffener		50.0 mm	Stiffener yield strength	115 MPa		Total depth of stiffener		75.00 mm	Stiffener yield strength	115 MPa
Section modulus (cm³)		To stiffener	39.13	To plate	96.02	Section modulus (cm³)		To stiffener	4.47	To plate	33.80	Section modulus (cm³)		To stiffener	39.13	To plate	96.02
Stiffener yields before plate						Stiffener yields before plate						Stiffener yields before plate				
Limiting modulus (cm³)		39.13	Limiting yield strength	115 MPa		Limiting modulus (cm³)		4.47	Limiting yield strength	115 MPa		Limiting modulus (cm³)		39.13	Limiting yield strength	115 MPa

ISO-12215-5 REQUIREMENT

Criterion	None	Required	Actual	CF	RESULT		Criterion		Required	Actual	CF	RESULT		Criterion		Required	Actual	CF	RESULT
Section modulus (cm³)		5.59	39.13	7.005	PASSES		Section modulus (cm³)		25.42	4.47	0.176	FAILS		Section modulus (cm³)		98.58	39.13	0.397	FAILS
Web area (cm²)		1.17	4.14	3.529	PASSES		Web area (cm²)		2.72	2.50	0.919	FAILS		Web area (cm²)		4.73	4.14	0.875	FAILS
t_{WEB} (to avoid buckling)		0.92	6.00	6.535	PASSES		t_{WEB} (to avoid buckling)		4.35	5.00	1.150	PASSES		t_{WEB} (to avoid buckling)		1.84	6.00	3.254	PASSES

STIFF B1

s (mm)	500	L_u (mm)	1000	k_c	
c (mm)	250	x (m)	3.00		0.500
s_{max} (mm)	500	for A_R	A_R (m²)	0.500
Mode	k_s	k_{SR}	k_t	P_{BM}
Planing	1.000	0.482	0.728	21.58
Displacement	0.800	0.386	0.728	17.00
			P_{BM}	21.58

STIFF B2

s (mm)	600	L_u (mm)	1800	k_c	
c (mm)	300	x (m)	6.40		0.545
s_{max} (mm)	600	for A_R	A_R (m²)	1.080
Mode	k_s	k_{SR}	k_t	P_{BM}
Planing	1.000	0.383	0.985	23.18
Displacement	0.640	0.250	0.985	17.00
			P_{BM}	23.18

STIFF B3

s (mm)	300	L_u (mm)	3200	k_c	
c (mm)	400	x (m)	8.70		0.684
s_{max} (mm)	1056	for A_R	A_R (m²)	3.379
Mode	k_s	k_{SR}	k_t	P_{BM}
Planing	1.000	0.272	1.000	17.00
Displacement	0.360	0.250	1.000	17.00
			P_{BM}	17.00

As the white boxes should be empty (click on the *clear all* button in the top left hand side if not) you can now TAB key through to enter values.

Plate thickness	4.00 mm	Plating yield strength		235 MPa
Attached plating width	320 mm			
Stiffener type and material		40 x 2 FB	Steel - E24/A (Basic Mild Steel)	
A (cm²)	0.00	$Z_{NA\,stiff}$ (cm)	0.00	I_{BASE} (cm⁴)	0.00
A_w (cm²)				0.17
Total depth of st				235 MPa
Section modulus				0.85
Stiffener yields				
Limiting modulu				235 MPa

Select from your available stiffeners and materials. The program knows the attached plating from the previous sheet

ISO-12215-5 REQUIREMENT

Criterion	Required	Actual	CF	RESULT
Section modulus (cm³)	3.74	0.85	0.228	FAILS
Web area (cm²)	0.40	0.00	0.000	FAILS
t_{WEB} (to avoid buckling)	#DIV/0!	0.00	#DIV/0!	#DIV/0!

For information: The #DIV/0! Means the program is trying to divide a number by zero which of course it can't do. The solution is pretty simple – you have not defined everything you need to. This shouldn't normally be a problem if you use a fixed materials database for most of your projects. You might also see this type of error if you don't define all required inputs for all 9 components.

➢ Review the green or red boxes to see the criteria that must be satisfied for stiffeners

1. Section modulus (i.e. is there enough bending strength?)
2. Web area (i.e. is there enough shear strength?)
3. Is the stiffener unlikely to buckle (i.e. is t_{WEB} big enough?)

The box underneath contains some of the ISO calculations you would need if you wanted to check the program against the standard.

PANEL B1

b (mm)	400	L (mm)	1995	k_c	
c (mm)	50	x (m)	3.00		0.684
L_{max} (mm)			m²)		0.4
L_{max} (mm)					0.500
Mode					P_{BM}
Planing	1.000	0.516	0.728	23.08
Displacement	1.380	0.712	0.728	28.36
			P_{BM}	28.36

Your display may have different values

STEP 7

There is no step 7. Even though in terms of completing the assessment there is a lot more to be done (i.e. picking off panel/stiffener dimensions, deciding what's a critical panel) and then….

a) Check bottom stiffeners B2 – B6

b) Go to topside zone, enter the 9 critical component sizes and locations (topsides are bit more complicated so go to Tutorial No.1 and review the appropriate help sheet before trying this for real)

c) Check topside 9 components by selecting the 'as-fitted' plate thickness and stiffener as defined in the MATERIAL LIST

d) Go to deck zone, do the same thing

e) Go to deckhouse zone, do the same thing

f) Go to bulkheads and enter the data indicated

g) Write report (try holding down ctrl key and pressing letter 'r' to see this – it is intended to be pretty obvious)

However in terms of what more you need to know to drive the program, we've covered everything. It's just more of the same. For anything else which is not clear you will need to go back to the ISO standard).
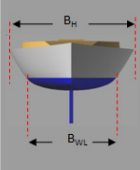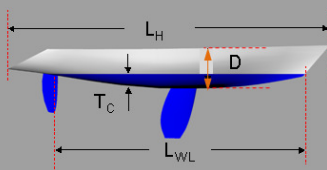
End of Tutorial No.3

TUTORIAL No.4- The Report

APPLICABLE TO MODULE:	ALL		
USER PROFILE:	First time users who have reviewed ISO-12215-5		
PREREQUISTES:	-	Any of 6 modules	
	-	PC running Excel 2007 or Excel 2010	
	-	Possession of a legal copy of ISO-12215-5	
	-	**COMPLETION OF TUTORIAL No.1, 2 and 3**	

> ➢ This symbol and text means this is an action (e.g. click with mouse) that you should do. If you do not see this symbol then it is a note for you to read.

STEP 1

> ➢ Launch the module of your choice (SEE Tutorial No.1) but make sure it's one with everything cleared (use *Clear all*)

MANUFACTURER/PERSON RESPONSIBLE FOR REPORT	
Contact details	
BOAT:	Report 08 June 2011

CRAFT PRINCIPAL DATA

SELF-CERTIFIER-12215-5

The HULL LENGTH is below the ISO-12215 lower limit of 2.5 metres

Hull length (Pt.5, 6.1)   L$_H$ Typical values only

See ISO-8666:2002 Small craft - Principal data for precise definitions

WL

H

WL

c

LDC

Design Category (Pt 5, 3.   Normally C or D
Speed used in calculations

Please note: ISO-12215-5 uses the AFT end of the waterline as the datum for defining longitudinal locations of components

STEP 2

> ➢ This time DON'T *Populate* but either click on Write Report or ctrl + 'r'.

REPORT MAKER

FIRST: Open Word - Open your company template
THEN: click through each button in turn BUT restore WORD and PASTE SPECIAL AS BITMAP or PICTURE not as paste before moving onto the next desired button

This page allows you to pick and mix. You can click, then cut and paste in any order you like, although 2,3 then bottom, side, deck ,deckhouse and partition is fairly logical. HOWEVER remember to paste after EACH click.

This is area to look at

➢ Now do this: ctrl + b and *Populate* then ctrl + k and *Populate* and finally ctrl + 'r'

Provided you started with a completely unpopulated file before you did this last step, you should see…

The report writing page is telling you that you have only defined data for the bottom shell and the deckhouse so that's ALL you need to Copy for pasting into your report.

STEP 3

➢ Do this: ctrl + 'b' and delete the data for stiffeners B4, B5 and B6 (leave the plate and stiffeners B1-B3, i.e. don't just *Clear all*.

You should see 4c (Bottom STIFFENERS 4-6) is no longer on the 'things to copy' list.

| 7a. Copy Deckhouse PLATING |
| 7b. Copy Deckhouse STIFFENERS 1-2 |
| 8. Copy WT Bulkhead |

y Deck TING

y Deck IERS 1-3

y Deck IERS 4-6

Select 2 and 3 plus the following from the list below:

Bottom	4	4a	4b	
Side				
Deck				
Deckhouse	7	7a	7b	
Partition				

It's gone

Now read the rest of the Write Report sheet – it should be pretty obvious.

End of Tutorial No.4

TUTORIAL No.5- Doing your first boat

APPLICABLE TO MODULE:	ALL		
USER PROFILE:	First time users who have reviewed ISO-12215-5		
PREREQUISTES:	- Any of 6 modules		
	- PC running Excel 2007 or Excel 2010		
	- Possession of a legal copy of ISO-12215-5		
	- **COMPLETION OF TUTORIAL No.1, 2, 3 or 4**		

BEWARE THE .Populate. BOX

All modules contain a quick method for entering DEFAULT (or 'factory') DATA. This is done for three reasons:

1. To avoid a distraction while you were getting to grips with the operation

2. To help the developer with validation (you might have noticed that some of the values were a little inconsistent – this was done to check various features of the software)

3. To help users unfamiliar with scantling calculations to enter the right data – typical errors are parameters in the wrong uses such as tonnes rather than kilograms or metres rather than millimetres. ISO-12215-5, like all boat scantling rules is far from being a pure SI (System International) with a mix of metric units.

In same cases it might be worth loading the default boat and then editing the data if your boat happens to be very similar **but be really careful here** as it's easy to overlook items and so your RCD assessment can end up as a mixture of your actual boat and a fictional craft.
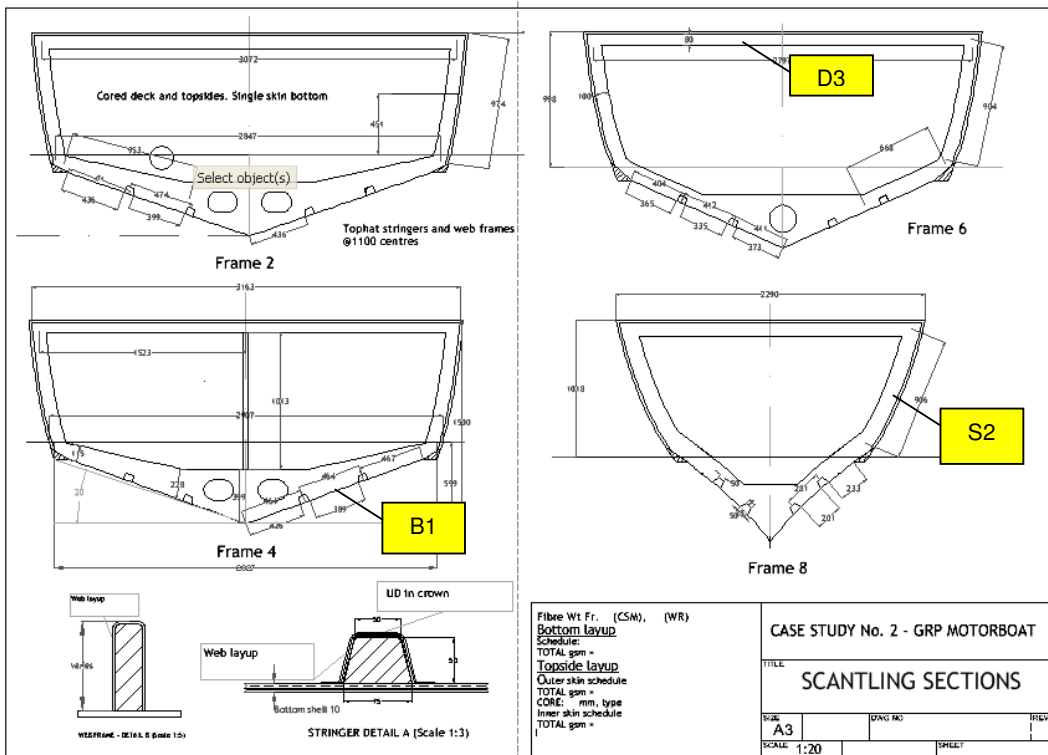
RECOMMENDATION 1

Before you do anything else for a real job:

1. Create a directory called 'ISO MASTER*' and transfer all your modules to that directory

2. Create a directory for each project, called 'BOAT #001*'

3. Copy and paste the Module of interest into C:\RCD assessments\BOAT #001 and rename the module BOAT001.exe

4. Now start entering the data – with this scheme you will never corrupt the master copy. In practice if the boats in your range are similar you will want to create a sub directory of ISO MASTER called BASIS BOAT* where you store a module set up with the right material list.

*Suggestion only – anything you like

RECOMMENDATION 2

1. Make a hard copy of the report – relying on electronic is dangerous. Technical Construction Files need to be kept for many years after the boat is placed on the market. You might upgrade your computer and this may mean the program will no longer work

2. Provide a set of annotated drawings using the component notation used in SELF-CERTIFIER-12215-5 as there is no facility to rename components

Good luck!