

STEEL TESTS.  
*Made at the Motala Steel and Iron Companies Works by the Bessemer Process - Tested at Motala*

Date of Trial.	Builder's Name.	Yard. No.	Description of Steel.	For what purpose intended.	Number of Sample.	Number of Plates or Angle Irons selected from.	Dimensions of Sample.			Breaking Strain of Sample.	Breaking Strain per Square Inch.	Elongation.	Forge Tests.				Remarks.
							Br'dth	Thick-ness.	Area.				Hot or Cold	Diamet'r required	Diamet'r bent to.	Results.	
							Ins.	Ins.	Ins.					Ins.	Ins.		
<i>For the Steam Ship "Norwegian" of Stockholm</i>	Motala Company		Angle Steel	Reversed frames	LH $\frac{5}{12}$	45	34.6	9.50	328.70 0.509	14.00	27.51	30.0	Cold	18/16	12/16	Good	
	"		"	"	LH $\frac{5}{12}$	45	34.9	9.65	326.79 0.522	14.10	27.01	27.5	"	18/16	14/16	"	
	"		"	frame	LS $\frac{3}{22}$	31	35.	9.80	343.00 0.522	14.70	27.63	25.5	"	18/16	14/16	"	
	"		"	"	LS $\frac{3}{29}$	31	34.8	9.70	327.56 0.523	14.50	27.72	25.0	"	18/16	10/16	"	
	"		"	"	LS $\frac{5}{5}$	31	34.	9.10	309.40 0.480	13.45	28.02	25.0	"	18/16	13/16	"	
	"		"	"	LS $\frac{23}{26}$	31	34.6	9.60	332.16 0.515	14.85	28.83	24.0	"	18/16	15/16	"	
	"		"	"	LS $\frac{23}{12}$	31	34.9	9.55	332.30 0.517	14.75	28.53	21.0	"	18/16	12/16	"	
	"		"	"	LS $\frac{23}{31}$	31	34.9	9.70	328.53 0.525	14.75	28.09	24.0	"	18/16	13/16	"	
	"		"	"	N $\frac{19}{4}$	31	34.8	9.70	327.46 0.523	14.15	27.05	24.0	"	18/16	14/16	"	
	"		Plate	Stringers	LB 42	30	35.2	12.85	452.32 0.701	19.10	27.24	24.0	"	24/16	16/16	"	
	"		Plate	Floor	LS $\frac{5}{5}$	26	34.6	9.90	342.54 0.531	14.40	27.11	24.5	"	39/32	36/32	"	
	"		"	Bulkhead	S. 45	25	35	7.80	272.00 0.423	12.80	30.26	20.0	"	18/16	10/16	"	
	"		"	Deck	D 2 1/2	37	35.2	9.70	341.44 0.529	15.	28.35	21.0	"	18/16	14/16	"	
	"		"	Stringers	N $\frac{12}{27}$	31	35.2	11.70	411.84 0.538	17.45	27.35	23.5	"	45/32	32/32	"	
	"		"	Deck	D 2 1/2	37	35.3	11.10	391.83 0.607	16.65	27.43	22.5	"	24/16	16/16	"	
	"		"	"	D 7/2	37	35.2	10.80	380.16 0.589	16.35	27.76	20.5	"	39/32	28/32	"	
	"		Bulb steel	Deckbeams	OD 26	23	34.9	10.15	354.23 0.549	15.20	27.50	28.0	"	39/32	25/32	"	
	"		"	"	OD 8 1/4	22	34.8	10.10	351.45 0.545	15.75	28.90	25.0	"	39/32	23/32	"	
	"		Plate	Deck	D 2 1/10	37	35.0	8.00	280.00 0.434	11.75	27.07	28.0	"	18/16	14/16	"	
	"		Angle Steel	Holdbeam	MD $\frac{15}{20}$	37	35.0	8.05	281.75 0.437	12.15	27.80	26.5	"	18/16	13/16	"	
	"		"	"	MD $\frac{2}{3}$	37	34.0	8.10	283.50 0.439	12.35	28.13	28.0	"	18/16	13/16	"	
	"		"	"	MD $\frac{5}{23}$	38	34.8	8.05	280.14 0.434	13.10	30.18	25.0	"	18/16	12/16	"	
	"		"	Reversed frame	LH $\frac{11}{8}$	45	35.0	9.60	336.00 0.521	15.35	29.27	25.0	"	18/16	18/16	"	
	"		"	"	LH $\frac{9}{38}$	45	35.0	9.45	330.75 0.513	15.85	30.77	25.5	"	18/16	15/16	"	
	"		Plate	Floor	LB 75	26	35.0	10.05	351.75 0.545	15.35	28.16	22.5	"	39/32	30/32	"	
	"		Plate	Bulkhead	S $\frac{7}{14}$	25	35.0	8.15	285.25 0.442	12.30	27.83	23.5	"	18/16	9/16	"	



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Date of Trial.	Builder's Name.	Yard. No.	Description of Steel.	For what purpose intended.	Number of Sample.	Number of Plates or Angle Irons selected from.	Dimensions of Sample.			Breaking Strain of Sample.	Breaking Strain per Square Inch.	Elongation.	Forge Tests.				Remarks.
							Br'dth	Thick-ness.	Area.				Hot or Cold	Diamet'r required	Diamet'r bent to.	Results.	
							Ins.	Ins.	Ins.					Ins.	Ins.		
	Motley Company		Angle Steel	Bilge Keelson	C. 64	25	35.1	13.30	466.83 0.724	28.50	29.70	26.0	Cold	27/16	11/16		
	"		"	"	C. 61	25	34.1	13.30	457.13 0.703	20	28.45	27.0	"	27/16	18/16		
	"		"	"	C. 52	25	33.7	13.65	460.00 0.713	20.85	29.24	26.0	"	27/16	17/16		
	"		"	"	C. 63	25	34.6	13.35	461.91 0.716	21.68	30.28	25.0	"	27/16	18/16		
	"		"	Reverend frame	L. H. 5/16	45	34.7	9.60	333.12 0.517	14.25	27.56	26.0	"	18/16	12/16		
	"		"	"	L. H. 5/16	45	34.5	9.40	324.30 0.503	15.40	30.61	25.0	"	18/16	12/16		
	"		Bulk	Deck beam	OD 6	22	34.7	10.55	366.08 0.568	15.75	27.70	26.5	"	39/32	30/32		
	"		Plate	Bottom plate	D. 19	35	34.8	9.20	320.16 0.496	17.55	27.32	26.5	"	18/16	13/16		
	"		"	"	C. 19	45	34.6	12.70	439.42 0.681	18.50	27.16	29.0	"	28/16	14/16		
	"		Bulk	Hold beam	MD 30	27	34.8	10.35	360.18 0.558	15.45	27.69	25.5	"	39/32	28/32		
	"		"	"	MD 32	27	34.8	10.00	348.00 0.539	14.45	26.81	27.0	"	39/32	28/32		
	"		"	"	MD 29	27	34.6	10.50	363.30 0.563	15.55	27.62	26.0	"	39/32	26/32		
	"		Plate	Inter central in water tank	J 1/4	50	35	8.40	295.75 0.458	12.55	27.40	21.5	"	39/32	28/32		
	"		"	Coal bunkers	J 1/4	102	34.5	9.50	327.75 0.508	14.70	28.90	23.0	"	18/16	14/16		
	"		Angle Steel	Deck	OD 3/4	50	34.7	7.60	262.72 0.409	11.40	27.87	27.0	"	15/16	14/16		
	"		"	"	OD 1 1/4	50	34.7	7.70	267.19 0.414	11.75	28.38	22.5	"	15/16	15/16		
	"		"	"	OD 1 1/2	50	34.7	7.65	265.45 0.412	11.60	28.15	21.5	"	15/16	12/16		
	"		Plate	Top side	J 15	50	34.8	12.55	406.74 0.677	18.25	26.96	24.5	"	24/16	22/16		
	"		"	"	L 2/20	50	35.0	14.10	493.50 0.765	22.15	28.96	20.5	"	27/16	20/16		
	"		"	Bilge	J 12	50	34.7	11.75	407.72 0.632	19.05	30.14	20.0	"	45/32	40/32		
	"		"	"	G 2/27	50	35.0	9.50	332.50 0.515	14.35	27.97	25.5	"	18/16	16/16		
	"		"	Top side	H 2/2	50	34.6	9.45	326.97 0.507	15.15	29.88	21.0	"	18/16	16/16		
	"		"	Bottom	S 2/24	50	34.7	10.70	371.29 0.575	16.50	28.69	21.0	"	21/16	14/16		
	"		"	"	O 4/1	44	34.8	9.40	327.12 0.507	15.55	30.27	22.0	"	18/16	14/16		
	"		"	"	B 19	49	35.0	11.60	406.00 0.629	17.25	27.42	22.5	"	45/32	40/32		
	"		"	Bilge	H 20	50	34.6	9.20	318.32 0.493	14.10	28.60	21.0	"	18/16	14/16		



Continued

Made at the Motala Steel and Iron Companies

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Works by the Bessemer Process - Tested at Motala

Date of Trial.	Builder's Name.	Yard. No.	Description of Steel.	For what purpose intended.	Number of Sample.	Number of Plates or Angle Irons selected from.	Dimensions of Sample.			Breaking Strain of Sample.	Breaking Strain per Square Inch.	Elongation.	Forge Tests.				Remarks.
							Br'dth	Thick-ness.	Area.				Hot or Cold	Diamet'r required	Diamet'r bent to.	Results.	
							Ins.	Ins.	Ins.					Ins.	Ins.		
For the Steam Ship "Neosceloby" of Stockholm.	Motala Company		Plate	Topside	M 2 1/2	47	34.7	9.30	322.71 0.100	15.70	27.40	24.0	Cold	18/16	14/16	Good	
	"		"	Garboard	A 16	38	34.0	13.70	465.80 0.722	20.00	27.70	20.0	"	18/16	18/16	"	
	"		"	Maat	T 2 1/4	26	35.2	9.55	329.12 0.510	14.10	27.65	20.0	"	18/16	16/16	"	
	"		"	"	T 3/4	26	34.5	9.40	324.30 0.503	15.60	27.05	21.0	"	18/16	14/16	"	
	"		Angle Steel	Keelson	B 4 3/8	34	35.0	14.40	504.00 0.781	23.22	29.75	20.0	"	27/16	18/16	"	
	"		"	Stringers	A 20	20	35.0	14.40	504.00 0.781	23.40	29.96	24.5	"	27/16	18/16	"	
	"		"	"	A 20	20	35.5	14.40	510.08 0.791	22.45	28.38	24.0	"	27/16	20/16	"	
	"		Plate	Topside	N 2 1/2	62	35.2	9.50	594.40 0.518	15.50	29.92	22.5	"	18/16	14/16	"	
	"		"	Bottom	A 19	50	34.6	12.70	439.42 0.681	18.90	27.75	23.5	"	24/16	20/16	"	
	"		Angle Steel	Upper Deck	O D 3 1/4	50	35.0	8.1	282.50 0.440	12.20	27.72	25.0	"	18/16	15/16	"	
	"		"	Frame	L P 5 1/2	31	35.0	9.25	327.25 0.507	14.80	29.19	24.0	"	18/16	14/16	"	
	"		"	"	L P 2 3/4	32	34.6	9.50	329.70 0.509	14.55	28.19	24.5	"	18/16	16/16	"	
	"		Plate	Floor	L B 4 1/2	25	34.8	10.00	348.00 0.540	15.00	27.77	23.5	"	39/32	30/32	"	
	"		"	Bulkhead	L 4 1/2	24	35.0	7.85	274.75 0.426	12.85	30.16	20.0	"	18/16	14/16	"	
	"		"	Floor	L B 7 3/8	25	35.5	10.10	352.53 0.553	15.82	28.61	22.0	"	39/32	28/32	"	
	"		"	Bulkhead	L 7 1/4	24	35.0	8.25	288.75 0.448	12.65	28.23	20.0	"	18/16	13/16	"	
	"		"	Deck	L 2 1/2	27	35.0	9.65	337.75 0.524	15.55	29.67	23.5	"	18/16	16/16	"	
	"		"	Stringer	H 12 1/2	30	35.2	12.75	448.80 0.696	18.76	27.00	22.0	"	45/32	32/32	"	
	"		"	Deck	L 2 3/8	37	34.7	11.10	385.17 0.597	16.63	27.85	24.5	"	21/16	18/16	"	
	"		Bulk	Deckbeam	O D 2 1/2	23	34.7	10.05	348.15 0.541	14.90	27.54	26.0	"	39/32	36/32	"	
	"		"	"	O D 8	22	34.7	10.10	352.47 0.543	15.80	29.09	27.5	"	39/32	28/32	"	
	"		Angle Steel	Holdbeam	M D 1 1/2	28	35.0	8.05	281.75 0.427	12.35	28.26	28.0	"	18/16	11/16	"	
	"		"	Reversed Frame	L H 4 1/8	45	34.8	9.55	372.54 0.515	15.20	29.51	23.0	"	18/16	14/16	"	
	"		"	Bridge Keelson	C 1 1/2	20	34.5	14.65	505.42 0.784	23.16	29.54	27.5	"	27/16	20/16	"	
	"		"	"	C 5 3/8	20	34.6	14.56	505.78 0.781	23.55	30.15	25.0	"	27/16	18/16	"	

Göteborg 4<sup>th</sup> of November 1880

C. A. Mäters  
Engineer Surveyor Lloyd's Register

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