

Seamless steel pipe for offshore applications in API 5L X52 Modified

The “Universal” quality for both structural and linepipe applications for low as well as high temperature purposes

With corresponding flanges and fittings upgraded to meet requirements from -50°C to $+400^{\circ}\text{C}$



ROLF LYCKE AS is a private limited company, established in 1919.
The company has grown and diversified to become a major supplier and stockist of pipe, fittings, flanges and valves in carbon, low temperature and stainless steel.

Division in Oslo, Stavanger, Bergen and Australia (Perth), allow for expeditious service and close monitoring of our customers needs.

The company has a quality assurance system for all divisions, in conformity with the requirements of NS-EN ISO 9001-2000.

Competent employees, always looking to update with new technologies and make Rolf Lycke AS synonymous with quality and efficiency.

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1. Description.

Seamless steel pipe in API 5L X52 Modified according to Rolf Lycke specification are made from steel by the oxygen or electric steel making process and are fully killed, with alloying elements giving a very fine grained structure. This means excellent resistance against brittle fracture and good aging resistance.

By the introduction of the Norsok Standard it has been necessary to adjust our specification accordingly.

Our specification is based on the API 5LX standard for linepipe purposes but the composition and mechanical properties should also meet the requirements as per Norsok Standard for structural purposes.

Both API and Norsok specify today Quenched and Tempered or Normalised as acceptable heat treatment condition. Due to the present chemical composition with restrictions on certain elements it is in many cases necessary with quenched and tempered condition in order to meet the requirements particularly for bigger wall thicknesses.

Our specification is applicable for a temperature range from -50° to $+400^{\circ}$ C.

Please note that we also supply corresponding flanges and fittings meeting the requirements of the Norsok Standard.

2. Chemical composition

We give you below the heat and product analysis in max. Values in weight %.

C	Mn	Si	S	P	Cu	Ni	Cr	Mo	V	Nb	Ti	Sn	B	N	Al
															Total
		0.15													
0.16	1.60	0.50	0.007	0.025	0.30	0.30	0.25	0.08	0.06	0.04	0.02	0.02	0.0005	0.014	0.06

The min. content of Mn is 1.10% and the average 1.20 to 1.35%.

V + Nb max: 0,10%

V + Nb + Ti $\leq$ 0,12%

Materials with V+Nb $\leq$ 0,06% and V+Nb+Ti $\leq$ 0,07% can be supplied from the mills on request at higher cost particularly for bigger wall thicknesses. A lot of material in stock meet these requirements.

$$CE = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Cu+Ni}{15} \leq 0,43 \text{ (heat \& product)}$$

$$P_{cm} = C + \frac{Si}{30} + \frac{Mn+Cu+Cr}{20} + \frac{Ni}{60} + \frac{Mo}{15} + \frac{V}{10} + 5B \leq 0,25 \text{ (heat \& product)}$$

A lot of the material in stock meet $< 0,22$

3. Desulphurization

Manganese sulphides are typical inclusions in all manganese alloyed steels. They are not desired because of their tendency to segregate as they reduce the metallic binding. This results in reducing the impact strength especially transverse to the main rolling direction. The most important measure against this is to reduce the sulphur content. We specify max. 0,007%.

4. Mechanical properties - at room temperature

Below you will find the values for the mechanical properties for our modified quality:

Below 40mm w.th.

Yield strength (Rp0.2)	358N/mm ²
Tensile strength (Rm)	490-620 Nmm ²
Elongation (2")	acc. to API, however 22% min.
Yield/tensile ratio	max. 0,87
Hardness	237 HB max. (22HRC max) according to NACE MR-01-75
Testing position	acc. to API – longitudinal ≤ 168.3, transverse ≥ 219.1mm O.D.

5. Yield point and tensile strength at elevated temperatures

Wall thickness mm	Index	Min. Value Rp0.2 and Rm at elevated temperature in N/mm ² . Test temperature in °C						
		100	150	200	250	300	350	400
up to 20	Rp0,2	304	284	255	235	216	196	167
over 20 to 50		294	275	255	235	216	196	167
over 50 to 65		284	265	245	226	206	186	157
over 65 to 80		275	255	235	216	196	177	147
over 80 to 100		265	245	226	206	186	167	137
up to 30	Rm	440	430	410	410	410	400	390
over 30 to 50		420	410	390	390	390	380	370
over 50 to 80		400	390	370	370	370	360	350
over 80 to 100		390	380	360	360	360	350	340

These values are not specified unless this requirements is asked for in the order. The test temperature must then be specified. A test will be performed at extra cost.

6. Notched bar impact toughness

The impact toughness (Charpy V-Notch) is tested at the temperature indicated in the order. If not mentioned the test temperature will be $\pm 50^{\circ}\text{C}$.

Min. requirements (10 x 10 specimen):

	0°C	$\pm 20^{\circ}\text{C}$	$\pm 40^{\circ}\text{C}$	$\pm 50^{\circ}\text{C}$
Average	80 J	72 J	64 J	56 J
Single	64 J	56 J	48 J	40 J

Min. requirements transverse: $\geq 219,1\text{mm}$ outside diameter

	0°C	$\pm 20^{\circ}\text{C}$	$\pm 40^{\circ}\text{C}$	$\pm 50^{\circ}\text{C}$
Average	56 J	48 J	44 J	36 J
Single	43 J	36 J	36 J	28 J

Please note that the values obtained in practise normally are far above the min. requirements.

7. Trough thickness test (TTT) acc. to SEL 096

Lamellar tearing is a type of weld area cracking occurring during or after fabrication by welding. These cracks are mainly due to the non-metallic inclusions in the steel since they determine the trough thickness ductility of rolled materials. Seamless pipe are not as exposed to lamellar tearing as plate and welded pipe due to the difference in production methods. Our modified quality with very low sulphur content will give excellent results for the reduction of area (RAz).

The RAz value will be min. 35% as average value of 3 samples. Previous tests indicate very high values. A test can be performed at extra cost if this should be considered necessary.

8. Ultrasonic testing

All pipe are subjected to a 100% ultrasonic test for longitudinal defects according to SEP 1915 or API Spec. 5L, SR4 with at test notch of 5% of the nominal wall thickness – 0,4mm min. 1,5mm max.

This is an automatic in line process most suitable for seamless pipe. Upon agreement, all pipe can be ultrasonically tested for laminations. This test is normally taken at the ends of the pipe. As pipe often are cut during mounting and welding, this test is normally done at site.

9. Magnetic particle inspection

MPI-test can also be carried out whether from stock or from the mill. This test is often used on the bevelled end or on the pipe ends.

10. Heat treatment – API 5L X65

Our modified X52 pipe are supplied in the normalised or quenched and tempered condition. The normalising temperature for this quality will be 900-950°C and after having reached this temperature over the entire cross section, the pipes are cooled in still air. Stress relieving temperature is 530-580°C.

When quenched and tempered, the pipe are heated to normalising temperature for ca. 30 min. and then cooled in water. Tempering will take place at approx. 640°C for 60 min. and then cooled in still air.

In the quenched and tempered condition the mechanical properties may meet X65 grade.

11. Physical properties (reference values)

Temperatur		20	100	200	300	400	500
Density	$\frac{10^3 \text{ kg}}{\text{m}^3}$	7.84					
Modulus of elasticity (dynamic)	$\frac{\text{kN}}{\text{mm}^2}$	212	207	200	193	185	176
Poisson's ratio (dynamic)		0.284	0.287	0.291	0.295	0.299	0.303
Thermal conductivity	$\frac{\text{W}}{\text{m.K}}$	42	43	43	41	39	37
Mean specific thermal capacity (reference temperature: 20°C)	$\frac{10^3 \text{ J}}{\text{Kg.K}}$	0.43	0.47	0.5	0.52	0.54	0.57
True specific Thermal capacity	$\frac{10^3 \text{ J}}{\text{Kg.K}}$	0.43	0.5	0.54	0.58	0.62	0.69
Thermal diffusivity	$\frac{10^{-6} \text{ m}^2}{\text{s}}$	12	11	10	9	8	7
Mean coefficient of linear expansion Between 20° C and	$\frac{10^{-6}}{\text{K}}$		12	13	13	14	14
Electrical resistivity	$\mu\Omega.\text{m}$	0.25	0.3	0.37	0.46	0.56	0.68
Magnetic behaviour	Magnetizable						

12. Hardness

It is often a requirement that the maximum hardness on any part of the weld is not to exceed ca. 310 HB. By following special welding procedures and taking all necessary precautions as to weld design, thickness, welding process, preheating, consumables, working temperature etc. it should be possible to obtain the max. HAZ hardness. The max. Hardness for our modified X52N pipe is 237 HB (22HRC) meeting also the requirement of NACE MR-01-75.

13. Grain size

The grain size of our X52 steel is 8 or finer in accordance with ASTM E 112-85 without special evidence. It evidence should be a requirement then an extra test will have to be performed.

14. Hot and cold forming

Our X52 Modified pipe can easily be both hot and cold formed. Hot forming should take place in the temperature range from 850°C to 1050°C and cooling in air. A normalising treatment after hot forming is only required if the last forming operation is carried out at temperatures outside the range of 850-950°C. Regarding cold forming with a high degree of cold working it is generally sufficient with stress relieving after forming unless a normalising treatment is specified in the fabrication specifications.

15. Welding and flame cutting

The welding technique applied is of fundamental importance to the service performance of the pipes specified. Our steel is weldable by all manual and automatic welding processes. In general no stress relieving is required. It should however be performed if prescribed in the construction specification or if a reduction of the residual welding stress seems advisable. Low hydrogen types of electrodes matching the properties of the parent metal are recommended. Despite the low carbon content and the low carbon equivalent it will always be necessary to preheat to get rid of moisture. No welding should be performed when the surfaces are humid.

16. Tolerances

The tolerances are in accordance with API 5L:

For outside diameter up to and incl.	457 mm:	$\pm 0,75\%$
> 457 mm:	$\pm 1\%$	
Wall thickness up to and incl.	457 mm:	$+15\%, \div 12,5\%$
> 457 mm:	$+17,5\%, \div 10\%$	

Straightness: deviation from a straight line shall not exceed 0,2% of the length.

17. Testing frequency

For the mechanical properties, the following test will be applicable: 1 specimen (and / or set of specimen) per lot according to API spec. 5L. For lots and heat exceeding 40 tons at least 2 specimens.

For the notch bar impact toughness the following test will be applicable: 1 set of specimens with 3 single specimens per lot and per heat as per API.

For the through thickness test for thickness 10mm and above a test will be performed per lot with one set of specimens with 3 single specimens at a time.

18. Hydrostatic test

The hydrostatic test will be performed according to API with max. 207 bar and a holding time of 5 seconds.

19. Temporary corrosion protection

The pipe are provided with an external temporary corrosion protection to prevent the pipe from being exposed to rusting during transportation and stoking. It is our experience that if the pipe are to be processed on receipt from the mill, no rust protection is recommended as the removal of new protection may cause problems. Also fittings and flanges are protected during transport and warehousing.

20. Quality assurance

Our company has an approved Quality Assurance System conforming to NS-EN ISO 9001:2000. This means that we are supplying pipe, flanges and fittings from first class producers with a corresponding quality assurance system.

We supply the pipe with certificates in accordance with EN 10204/3.1.C and flanges and fittings as per EN 10204/3.1.B.

21. Marking

Our pipe will be die stamped with heat no., producers symbol, quality, U.S. Test (SR4/N5), symbol of inspection company and API Monogram (wherever feasible) in on end of the pipe at least 50mm max. 150mm from one end. This marking will be framed with white paint. The fittings and flanges will be die stamped with heat no., producers symbol, quality, size and pressure rating.

22. Present stock program API 5L X52 Modified - pipes

NPS IN	O.D. MM	W.T. MM	RL- CODE	KG/MT	API-id. SCH.NO	LENGTHS MT
1"	33.4	4.55	11400940	3.24	80	8-12
		6.35	11401000	4.23	160	8-12
1.1/2"	48.3	5.08	11401100	5.4	80	8-12
		7.14	11401200	7.23	160	8-12
		10.16	11401300	9.55	XXS	8-12
2"	60.3	3.91	11401400	5.44	STD/40	8-12
		5.54	11401500	7.48	XS/80	8-12
		8.74	11401600	11.12	160	8-12
		11.07	11401700	13.45	XXS	8-12
		12.7	11401750	15		8-12
		14.2	11401780	16.1		8-12
2.1/2"	73	5.16	11401800	8.62	STD/40	8-12
		7.01	11401900	11.41	XS/80	8-12
3"	88.9	5.49	11402000	11.29	STD/40	8-12
		7.62	11402100	15.27	XS/80	8-12
		11.13	11402200	21.34	160	8-12
		15.24	11402300	27.67	XXS	8-12
		17.5	11402380	28.8		8-12
4"	114.3	6.02	11402400	16.07	STD/40	8-12
		8.56	11402500	22.31	XS/80	8-12
		11.1	11402600	28.3	120	8-12
		13.49	11402700	33.53	160	8-12
		17.12	11402800	41.02	XXS	8-12
		20	11402900	46.5		8-12
		22.2	11402970	50.4		8-12
		25.4	11403000	55.68		8-12
5"	141.3	6.55	11403200	21.78	STD/40	8-12
		9.52	11403300	30.95	XS/80	8-12
		12.7	11403380	40.2	120	8-12
		15.88	11403400	49.11	160	8-12
		19.05	11403450	57.42	XXS	8-12
6"	168.3	7.11	11403500	28.26	STD/40	8-12
		10.97	11403600	42.56	XS/80	8-12
		12.7	11403700	48.73		8-12
		14.27	11403800	54.2	120	8-12
		18.26	11403900	67.56	160	8-12
		21.95	11404000	79.22	XXS	7-11
		25.4	11404100	89.5		6-10

NPS IN	O.D. MM	W.T. MM	RL- CODE	KG/MT	API-id. SCH.NO	LENGTHS MT
6"		28	11404150	96.9		6-10
		31.8	11404200	107		4-8
8"	219.1	6.35	11404400	33.31	20	8-12
		8.18	11404500	42.53	STD/40	8-12
		10.31	11404600	53.1	60	8-12
		12.7	11404700	64.63	XS/80	8-12
		15.88	11404800	79.58		8-12
		19.05	11404900	93.98		8-12
		22.23	11405000	107.92	XXS	8-12
		23	11405060	111.27	160	8-12
		25.4	11405100	121.33		8-11
		28	11405200	132		4-7,5
		31.8	11405300	146.88		4-7,5
		38.1	11405400	170.06		4-6
10"	273	6.35	11405500	41.77	20	8-12
		9.27	11405600	60.31	STD/40	8-12
		12.7	11405700	81.55	XS/60	8-12
		15.88	11405800	100.73		8-12
		19.05	11405900	119.3		8-12
		21.44	11405940	133.04	120	8-12
		25.4	11405970	155.15	XXS/140	8-12
		28.58	11406000	172.33	160	8-10,5
		31.75	11406200	188.97		8-10,5
		35	11406300	205		6-9
		38.1	11406400	220.7		6-9
		45	11406450	253		4-8
		50	11406500	274.96		4-7,5
12"	323.8	6.35	11406540	49.73	20	8-12
		7.14	11406600	55.77		8-12
		9.53	11406700	73.88	STD	8-12
		10.31	11406800	79.73	40	8-12
		12.7	11406900	97.46	XS	8-12
		14.27	11407000	108.96	60	8-12
		15.88	11407100	120.62		8-12
		17.48	11407200	132.08	80	8-12
		19.05	11407300	143.21		8-12
		21.44	11407370	159.91	100	8-12
		25.4	11407400	186.97	XXS/120	8-12
		31.75	11407500	228.74		6-10
		33.32	11407600	238.76	160	6-10

NPS IN	O.D. MM	W.T. MM	RL- CODE	KG/MT	API-id. SCH.NO	LENGTHS MT
12"		38.1	11407700	268.43		6-9,5
		45	11407900	309.38		4-6,5
		50	11407950	337.6		3-6
		55	11408000	364.57		3-5,5
14"	355.6	7.92	11408080	67.9	20	8-12
		9.53	11408100	81.33	STD/30	8-12
		11.13	11408180	94.55	40	8-12
		12.7	11408200	107.39	XS	8-12
		15.88	11408400	133.03		8-12
		19.05	11408500	158.1	80	8-12
		25.4	11408700	206.83		7-11
		31.75	11408800	253.56	140	5-8,5
		35.71	11408850	281.7	160	5-8
		38.1	11408900	298.3		4-7,5
		60	11409000	437.37		3-5
16"	406.4	7.92	11409080	77.83	20	8-12
		9.53	11409100	93.27	STD/30	8-12
		12.7	11409200	123.3	XS/40	8-12
		14.27	11409300	137.99		8-12
		15.88	11409400	152.93		8-12
		16.66	11409470	160.12	60	8-12
		17.48	11409500	167.65		8-12
		19.05	11409700	181.97		7-11
		21.44	11409850	203.53	80	7-10
		25.4	11409900	238.64		6-9,5
		31	11409980	286	120	6-8
		31.75	11410000	293.33		4-7,5
		38.1	11410100	346.03		4-6,5
		61	11410150	520		
		65	11410200	547.23		6-9,5
18"	457.2	7.92	11410270	87.71	20	8-12
		9.52	11410290	105.1	STD	8-12
		12.7	11410300	139.15	XS	8-12
		15.88	11410400	172.74		8-12
		19.05	11410500	205.74	60	8-12
		23.83	11410550	254.67	80	8-12
		25.4	11410600	270.34		8-12
		31.75	11410700	332.95		8-12
		38.1	11410800	393.76		8-12
		45.24	11410820	459.59	160	7-10

NPS	O.D.	W.T.	RL-	KG/MT	API-id.	LENGTHS
IN	MM	MM	CODE		SCH.NO	MT
20"	508	9.52	11410880	117.15	STD/20	8-12
		12.7	11410900	155.12	XS/30	8-12
		15.1	11410950	183	40	8-12
		15.88	11411100	192.71		8-12
		17.48	11411200	211.44		8-12
		19.05	11411300	229.7		8-12
		23.83	11411350	284.52		8-12
		25.4	11411400	302.28		8-12
		26.2	11411450	311		8-12
		31.75	11411500	372.88		8-12
		32.5	11411650	381		8-12
		38.1	11411700	441.49	120	8-12
		50.8	11411760	572.75	160	7-10,5
22"	559	12.7	11411960	171.09	XS/30	8-12
		15.88	11411980	213		8-12
		19.05	11412000	253.65		8-12
		25.4	11412100	334.23		8-12
		31.75	11412200	412.81		8-12
		38.1	11412300	489.41		8-11,5
24"	610	9.52	11412450	141.12	STD/20	8-12
		12.7	11412470	187.06	XS	8-12
		14.27	11412500	209.64	30	8-12
		15.88	11412550	232		8-12
		17.48	11412700	255.41	40	8-12
		19.05	11412800	277.61		8-12
		25.4	11412900	366.17		8-12
		31.75	11413100	452.74		8-12
		38.1	11413200	537.33		7-10,5
		50.8	11413300	700.53		5-8

Lengths

Please observe our long double random lengths, giving advantages in connection with welding. Also reduced consumption of fittings when used for piping.

The above dimensions and weights have been adjusted to conform to ANSI / ASME B36.10M - 1985 or API standard 5L.

23. Fittings

The fittings we supply are in accordance with the standard ASTM A-860 specification for high wrought butt welding fittings. The material is supplied in the grade WPHY 52 and is modified to meet the requirements specified in this brochure for mechanical properties as well as carbon equivalent and impact properties, meeting the Norsok Standard.

The fittings are supplied in the normalised or the quenched and tempered condition. Dimensions and tolerances will comply with ANSI B.16.9. and the ends will be bevelled in accordance with ANSI B.16.25.

Our present stock program for these fittings is:

2" – 16" sch.40, sch.160 and sch.XXH.

Other sizes quickly from mill stocks.

24. Flanges

The flanges we supply in accordance with the ASTM material standard A694 F552 or A350 LF2 for forgings. The material is supplied in the grades F52 or LF2 and is modified to meet the requirements specified in this brochure for mechanical properties as well as carbon equivalent and impact properties, meeting the Norsok Standard.

The flanges are supplied in the normalised, normalised and tempered or the quenched and tempered condition.

Dimensions and tolerances will comply with ANSI B.16.5 up to 24" and MSS SP44 from 26" and above.

Our present stock program for these flanges is:

½" – 24" in 150 lbs, 300 lbs and 600 lbs and

½" – 8" in 1500 lbs.

Other sizes quickly from mill stocks.

SALGS- OG LEVERINGSBETINGELSER	TERMS AND CONDITIONS
1. SALGSVILKÅR Disse salgsvilkår gjelder i sin helhet for alt varesalg fra selgeren. salgsvilkårene går foran bestemmelser eller opplysninger som måtte fremkomme i kjøpers ordre eller korrespondanse, med mindre selgeren skriftlig har samtykket i annet. Kjøperen aksepterer disse salgsvilkår ved underskrift av ordrebekræftelse, salgsavtale, fremsendelse av skriftlig bestilling eller gjennom mottagelse av leverte varer. 2. TILBUD OG AKSEPT Selgerens tilbud er uforpliktende og kan trekkes tilbake eller endres inntil kjøperens skriftlige ordrebekræftelse er mottatt av selger. Ved levering fra lager gjelder tilbudet med forbehold om mellomsalg. 3. PRIS Med mindre annet er skriftlig avtalt gjelder selgerens pris ved avsendelse av varene. Dette gjelder også ved del- eller restleveringer. Prisene er angitt eksklusive mva og gjelder FCA selgerens adresse (Oslo - Bryne - Bergen). 4. PRISENDRIINGER Dersom offentlige skatter eller avgifter skulle endres, eller nye skatter eller avgifter pålegges, kan selgeren endre prisene tilsvarende frem til leveringsdag. Det tas likeledes forbehold om å justere prisene ved endring i fraktpreisen og ved valutakursendringer, pluss legeringstillegg. 5. LEVERINGSTID Oppgitt leveringstid er veiledende hvis det ikke uttrykkelig er angitt i tilbudet at den er garantert. 6. RISIKO FOR SALGSGJENSTANDEN Varen er å anse for levert når den er overgitt til selvstendig transportfører. Risikoen for salgsgjenstanden går over på kjøperen når varen er levert. Fra leveringstidspunktet har kjøperen ansvaret for forsikring av salgsgjenstanden. 7. EMBALLASJE Emballasjen tas ikke i retur uten særskilt avtale. 8. BETALINGSVILKÅR Ved overskridelse av betalingsfristen plikter kjøper å betale den til enhver tid gjeldende morarente (f.t. 8,75% p.a.). Reklamasjon pga. uvesentlige mangler utsetter ikke betalingsfristen. 9. KJØPERS MISLIGHOLD Selgeren kan heve avtalen med kjøper samt kreve erstatning for samtlige utgifter som oppstår i anledning misligholdte, herunder ikke begrenset til transport og lagerleie m.v.. 10. SALGSPANT Selskapet har salgspant i de solgte varer inntil kjøpesummen i sin helhet med tillegg av renter og omkostninger er fullt betalt (pantelovens §3-14 flg.). Kjøperen skal holde varen forsvarlig forsikret. Kjøperen har ikke rett til å avhende eller pantsette varen før kjøpesummen er betalt. Ved avhendelse / pantsettelse av varen før kjøpesummen i sin helhet er betalt, trer selgeren inn i de rettigheter og krav kjøperen har mot tredjemann. 11. VARENS SPESIFIKASJON Kjøperen har risikoen for at varen, herunder dens tekniske data, passer til behovet. Angir bestillingen ikke særskilte krav til kvalitet, leveres varene i henhold til sertifikatspesifikasjoner fra selgers leverandør. 12. REKLAMASJONER OG MANGLER Ved mottagelsen må kjøperen straks inspisere varene. Eventuelle mangler må påberopes skriftlig uten ugrunnet opphold dersom selgeren skal holdes ansvarlig. Ved transportskade skal reklamasjon straks meddeles transportør. Selgeren er uten ansvar for kvantitetsmessige mangler med mindre det er mottatt skriftlig reklamasjon fra kjøper innen syv dager fra leveringstidspunktet. Selskapets ansvar for kvantitetsmessige mangler er begrenset til å foreta etterlevering eller kredittering av det beløp mangelen måtte representere i henhold til faktura. Ved kvalitative feil eller mangler som selgeren er ansvarlig for, forbeholder selgeren seg rett til å avhjelpe mangel eller foreta omlevering uten kostnad for kjøper. Selgerens erstatningsansvar overfor kjøper eller tredjemann skal ikke i noe tilfelle overstige varens nettofaktura pris fra selger. Kvalitative feil og mangler må påberopes av kjøper skriftlig innen tolv måneder etter leveringstidspunktet. Etter den tid bortfaller kjøpers reklamasjonsrett. Selgeren fraskriver seg et hvert ansvar for tap, skader eller lignende som måtte være forvoldt av mangelfullt materiell eller arbeid. Selgeren er heller ikke ansvarlig for feil, mangler eller forsinkelser som er forårsaket av forhold selgeren ikke er herre over. Dette gjelder blandt annet ved: - vanlig slitasje - uriktig anvendelse eller betjening av varen - mangelfullt vedlikehold, montering, reparasjoner eller modifisering utført av person selgeren er uten ansvar for 13. RETUR Retur av varen kan kun skje etter forutgående skriftlig avtale med selger. Varer som ikke er standard lagervare tas bare i retur dersom returretten videre til selgerens leverandør foreligger. Sistnevntes returgebyr, samt eventuelle ekstra omkostninger kommer da i tillegg til selgerens returgebyr. 14. FORCE MAJEURE a. Ingen av partene skal anses å ha misligholdt sine forpliktelser etter denne avtale i den utstrekning han kangedt gjøre at overholdelse av dem er blitt forhindret på grunn av force majeure. b. Den part som vil påberope seg force majeure skal straks gi den annen part skriftlig varsel om en slik situasjon. c. Hvis en force majeure situasjon fortsetter uten avbrudd i 30 dager eller mer, skal hver av partene ha rett til å heve avtalen ved å gi skriftlig varsel til den annen part. Kjøper kan, ved heving fra selgers side, kreve å få utlevert kjøpsgjenstanden i den tilstand den er i hevgstidspunktet, mot å betale en forholdsmessig del av kjøpesummen. 15. ENDRING AV AVTALEN Enhver endring eller tilføyelse til avtalen skal skje skriftlig. 16. TVISTER Enhver tvist som måtte oppstå mellom partene i forbindelse med denne avtale og derav følgende rettsforhold, skal avgjøres etter norsk rett ved de alminnelige domstoler. Ved søksmål anses selgerens verneting som vedtatt av begge parter.	1. TERMS AND CONDITIONS Vendor's terms and conditions cover all sales and precede terms and conditions set by buyer, unless vendor has confirmed otherwise, in writing. The buyer accepts vendor's terms and conditions by issuing an order or by receiving goods. 2. QUOTES AND OFFERS Vendor's quotes and offers are subject to change or withdrawal until written order confirmation has been received by vendor. Sales from stock are subject to availability. 3. PRICES Unless otherwise agreed in writing vendor's prices prevail. All prices are FCA, excluded sales tax/VAT at vendor's locations. (Oslo - Bryne - Bergen) 4. PRICE ADJUSTMENTS Vendor may, in the event of changes in taxes, duties, tariffs, customs, change prices accordingly - until delivery date. Vendor may furthermore adjust prices in the event freight/forwarding/foreign exchange an alloy surcharges change. 5. TIME OF DELIVERY The stipulated time of delivery is for information only, unless vendor has made a specific guarantee in writing. 6. PASSING OF RISK, SHIPMENT Buyer assumes risk when goods are picked up by independent forwarding agent/carrier. Buyer is responsible for the insurance of shipped goods. 7. PACKING Packing material is not returnable, unless agreed upon, in writing. 8. PAYMENT Late payment will result in interest charges, 8,75% p.a. from due date. Partial -or other insignificant claims, do not warrant late payment 9. BUYER'S NEGLIGENCE Vendor's entitled to void any contract and to claim compensation for all expenses deriving from the buyer failing to fulfill their obligations according to contract. This is not limited to transportation and warehousing costs. 10. RETENTION OF TITLE The goods shall remain vendor's property until all vendor's claims against buyer have been settled. Ref. Norwegian Law: Mortgages & Titles. § 3-14 and so on. Buyer must ensure that goods are adequately stored and insured. Buyer cannot re-sell goods until vendor has received full payment. Vendor shall seize any lien buyer has on third-party. 11. SPECIFICATIONS OF GOODS Buyer is responsible for and must ensure that goods and technical data meet all requirements for their intended use. In the event vendor does not receive any specifications of standards or quality, the goods will be delivered according to certificates issued by vendor's suppliers. 12. CLAIMS AND INSPECTION OF GOODS Buyer must inspect goods upon receipt and notify vendor, in writing, without delay, of any defect or faulty delivery if vendor is to be liable. Damage incurred during transport must be claimed immediately with forwarding agent/carrier. Vendor is not liable for insufficient deliveries, unless vendor has received a written claim from buyer, no later than 7 days form delivery. Vendor's liability for failing to deliver correct quantities is limited to delivering remaining items or issuing a credit against paid invoice. Vendor shall, at vendor's discretion, either repair or replace defective goods. Vendor's liability for buyer or 3rd. party will under no circumstances exceed vendor's net invoiced price. Defective goods must be claimed in writing prior to 12 months from delivery. Buyer's right to claim defective goods, expires 12 months from delivery. Vendor will under no circumstances accept consequential losses. Vendor is not liable for the following defects: - Wear & tear - Incorrect use or operation - Insufficient maintenance, installation, repair or modifications, not carried out by vendor. 13. RETURNING GOODS / BUYBACK Buyback is subject to written agreement with vendor. Non-stock items will not be taken back, unless vendor's supplier agrees to take goods in return. Supplier's costs and fees will then, in addition to vendor's costs and fees, be subtracted from net invoiced price. 14. FORCE MAJEURE a. Both parties will not be liable in the event they are unable to fulfill a contract due to Force Majeure. b. The party that claims Force Majeure must notify the other party immediately in writing. c. In the event a Force Majeure situation is prolonged beyond 30 days or more, either party may cancel the order, in writing. Buyer may in the event vendor cancels order demand the ordered item(s) in its present stage of manufacture, subject to price adjustments. 15. AMENDMENTS Any change or adjustment to order, shall be done in writing. 16. DISPUTES / PLACE OF ARBITRATION / APPLICABLE LAW Any dispute of contract shall be covered by Norwegian Law. Buyer accepts vendor's venue for arbitration.

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