
**Marine structures — Mobile offshore
units — Chain wheels**

Structures maritimes — Unités mobiles au large — Pignons à chaîne

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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification	2
4.1 Types of the chain wheels	2
4.2 Designation	7
5 Requirements	7
5.1 Geometric tolerance and dimensional tolerance	7
5.2 Materials	8
6 Inspection	8
6.1 Dimensional and geometric inspection	8
6.2 Visual inspection for surface quality	8
6.3 Inspection of tooth surface hardness	8
6.4 Material inspection	8
Bibliography	9

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take Part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Marine structures — Mobile offshore units — Chain wheels

1 Scope

This document specifies the requirements for the profiles, dimensions, tolerances, materials and inspection of chain wheels for chains on mobile offshore units.

Chain wheels meeting the requirements of this document can be used with offshore mooring chains conforming to ISO 20438.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3828, *Shipbuilding and marine structures — Deck machinery — Vocabulary and symbols*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 8062-3, *Geometrical product specifications (GPS) — Dimensional and geometrical tolerances for moulded parts — Part 3: General dimensional and geometrical tolerances and machining allowances for castings*

ISO 11971:—¹⁾, *Steel and iron castings — Visual examination of surface quality*

ISO 16859-1, *Metallic materials — Leeb hardness test — Part 1: Test method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3828 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

pitch diameter

D_p

circumscribed circle diameter of the regular polygon formed by the centerline of the stud-link anchor chain where the anchor chain is engaged with the chain wheel

Note 1 to entry: Pitch diameter is used to calculate the maximum torque of the anchor chain during operation.

3.2

speed calculation diameter

D_v

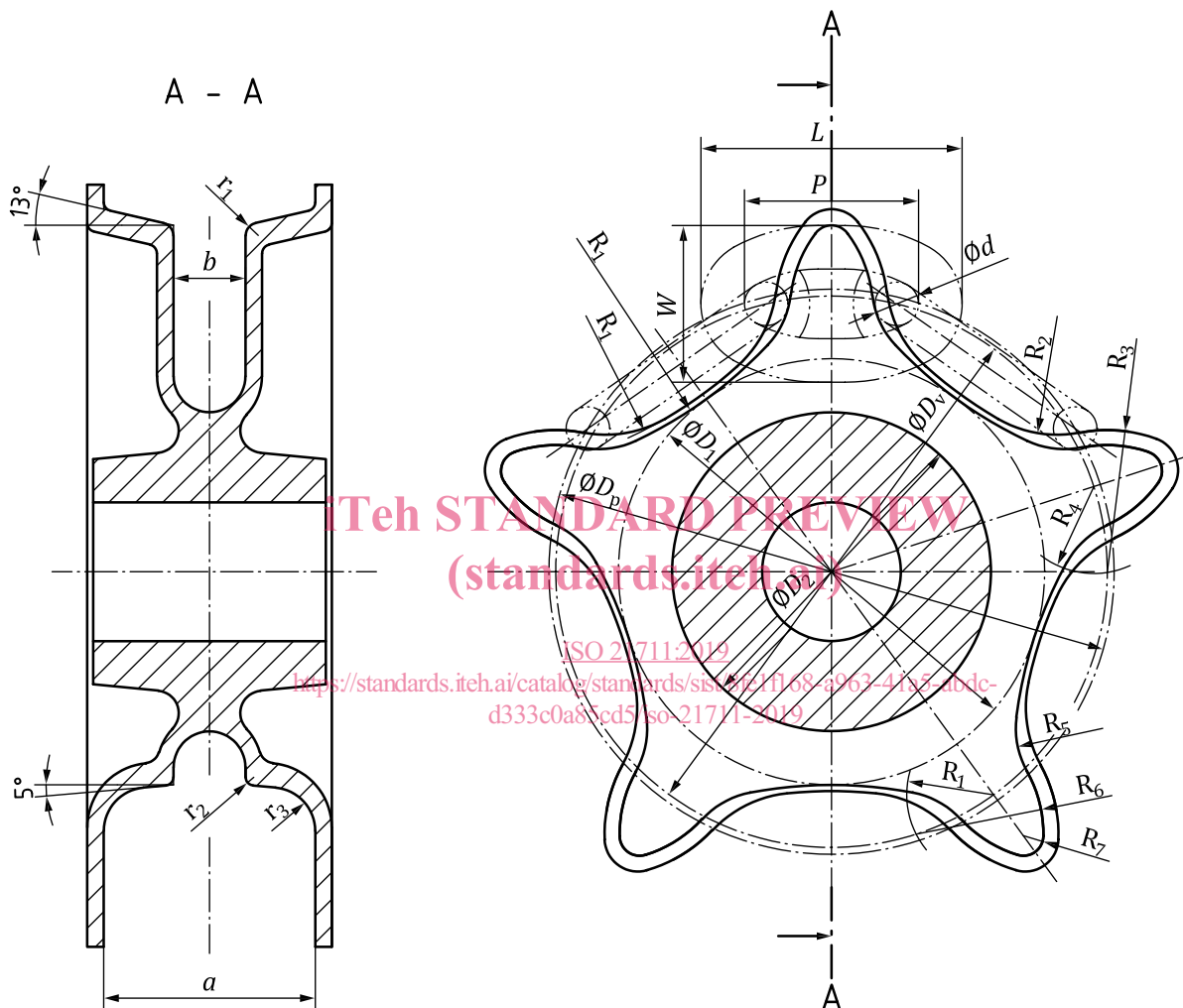
diameter of the moving line of the stud-link anchor chain when anchoring with power

1) Under preparation. Stage at the time of publication: ISO/DIS 11971:2018.

4 Classification

4.1 Types of the chain wheels

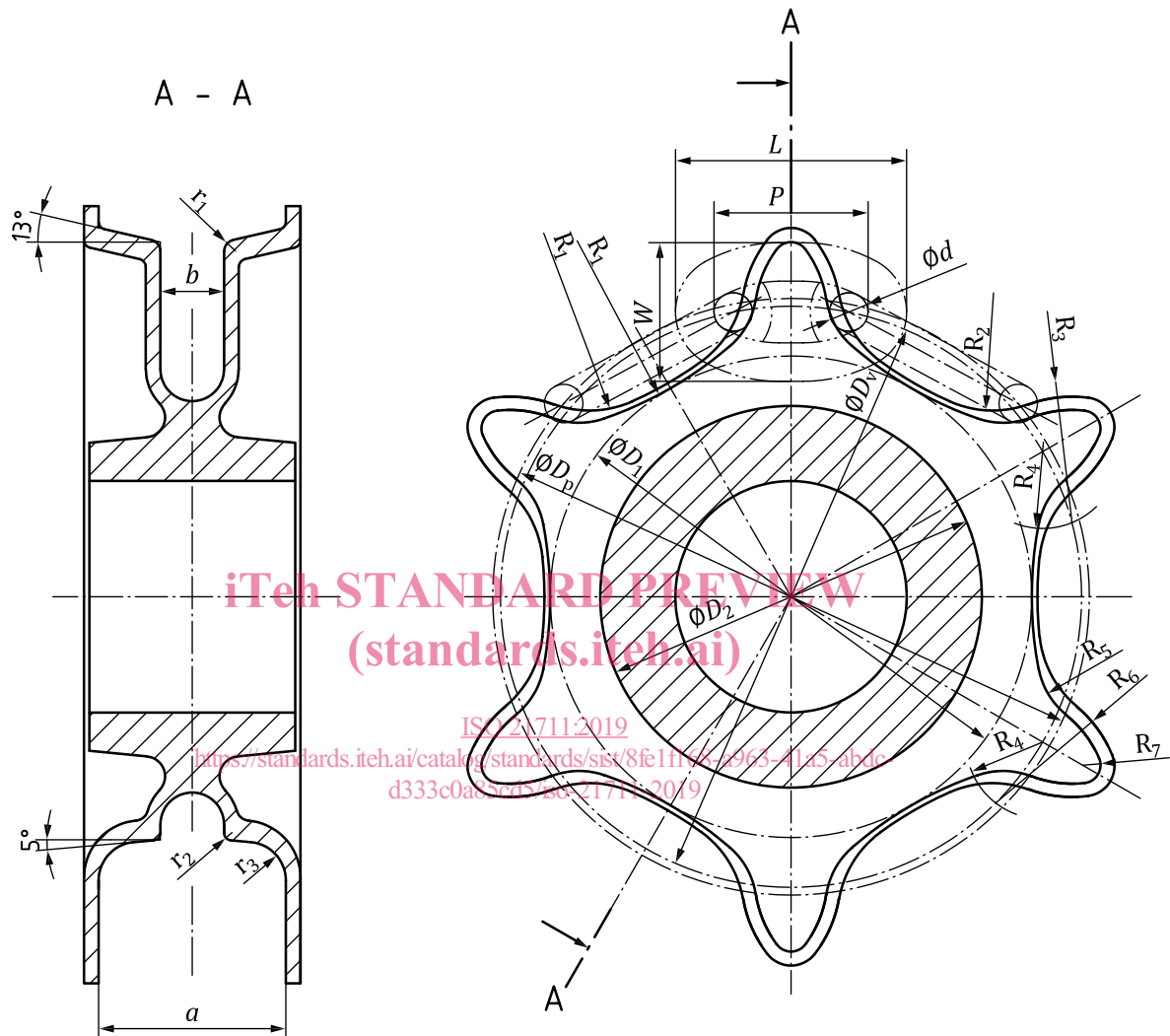
- a) Type A — 5-tooth chain wheel, see [Figure 1](#) for the tooth profile structure. The nominal dimensions are given in [Table 1](#).



It is not recommended to select values in the shaded area.

Figure 1 — Tooth profile structure of type A chain wheel

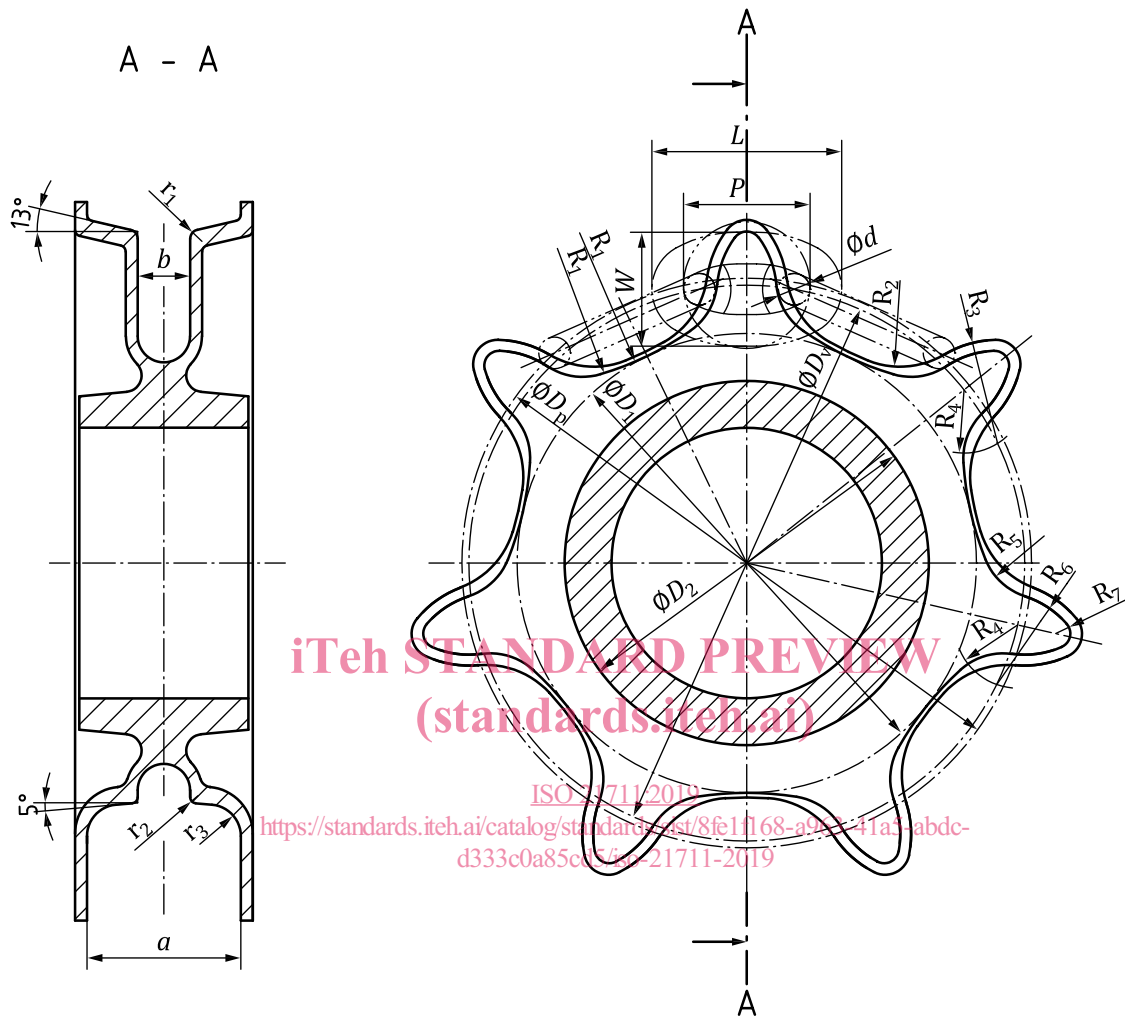
- b) Type B — 6-tooth chain wheel, see [Figure 2](#) for the tooth profile structure. The nominal dimensions are given in [Table 1](#).



It is not recommended to select values in the shaded area.

Figure 2 — Tooth profile structure of type B chain wheel

c) Type C — 7-tooth chain wheel, see Figure 3 for the tooth profile structure. The nominal dimensions are given in Table 1.



It is not recommended to select values in the shaded area.

Figure 3 — Tooth profile structure of type C chain wheel

Table 1 — Nominal dimensions of chain wheels

Dimensions in mm

Link				Chain wheel																
d	L	P	W	Teeth/ Type	D_v	D_p	D_1	D_2	a	b	R_1	R_2	R_3	R_4	R_5	R_6	R_7	r_1	r_2	R_3
50	300	200	180	5 A	633	649	490	367	243	83	500	136	164	100	100	146	23	15	9	50
				6 B	754	775	625	496												
				7 C	878	900	726	576												
52	312	208	187	5 A	659	675	510	381	253	86	520	142	171	104	104	152	24	15	10	52
				6 B	784	806	650	516												
				7 C	913	936	755	599												

Table 1 (continued)

Link				Chain wheel																	
<i>d</i>	<i>L</i>	<i>P</i>	<i>W</i>	Teeth/Type		<i>D_V</i>	<i>D_P</i>	<i>D₁</i>	<i>D₂</i>	<i>a</i>	<i>b</i>	<i>R₁</i>	<i>R₂</i>	<i>R₃</i>	<i>R₄</i>	<i>R₅</i>	<i>R₆</i>	<i>R₇</i>	<i>r₁</i>	<i>r₂</i>	<i>R₃</i>
54	324	216	194	5	A	684	701	529	396	263	89	540	147	177	108	108	158	25	16	10	54
				6	B	815	836	675	535												
				7	C	948	972	784	622												
56	336	224	202	5	A	709	727	549	411	272	93	560	153	184	112	112	164	26	17	10	56
				6	B	845	867	700	555												
				7	C	984	1008	813	645												
58	348	232	209	5	A	735	753	568	425	282	96	580	158	190	116	116	170	27	17	11	58
				6	B	875	898	725	575												
				7	C	1 019	1 044	842	668												
60	360	240	216	5	A	760	779	588	440	292	99	600	164	197	120	120	176	28	18	11	60
				6	B	905	929	750	595												
				7	C	1 054	1 080	871	691												
62	372	248	223	5	A	785	805	608	455	302	103	620	169	204	124	124	181	29	18	12	62
				6	B	935	960	775	615												
				7	C	1 089	1 116	900	714												
64	384	256	230	5	A	811	831	627	469	311	106	640	175	210	128	128	187	29	19	12	64
				6	B	966	991	800	635												
				7	C	1 124	1 152	929	737												
66	396	264	238	5	A	836	857	647	484	321	109	660	180	217	132	132	193	30	20	12	66
				6	B	996	1 022	825	654												
				7	C	1 159	1 188	958	760												
68	408	272	245	5	A	861	883	666	499	331	112	680	186	223	136	136	199	31	20	13	68
				6	B	1 026	1 053	850	674												
				7	C	1 194	1 224	987	783												
70	420	280	252	5	A	887	909	686	513	340	116	700	191	230	140	140	205	32	21	13	70
				6	B	1 056	1 084	875	694												
				7	C	1 229	1 260	1 016	806												
73	438	292	263	5	A	925	948	715	535	355	121	730	199	240	146	146	214	34	22	14	73
				6	B	1 101	1 131	913	724												
				7	C	1 282	1 314	1 060	841												
76	456	304	274	5	A	963	987	745	557	370	126	760	207	250	152	152	222	35	22	14	76
				6	B	1 147	1 177	950	754												
				7	C	1 335	1 368	1 104	876												
78	468	312	281	5	A	988	1 013	764	572	379	129	780	213	256	156	156	228	36	23	15	78
				6	B	1 177	1 208	975	773												
				7	C	1 370	1 404	1 133	899												
81	486	324	292	5	A	1 026	1 052	794	594	394	134	810	221	266	162	162	237	37	24	15	81
				6	B	1 222	1 255	1 013	803												
				7	C	1 423	1 458	1 176	933												
83	498	332	299	5	A	1 051	1 078	813	609	404	137	830	226	273	166	166	243	38	25	15	83
				6	B	1 252	1 286	1 038	823												
				7	C	1 458	1 494	1 205	956												
84	504	336	302	5	A	1 064	1 091	823	616	409	139	840	229	276	168	168	246	39	25	16	84
				6	B	1 267	1 301	1 050	833												
				7	C	1 475	1 512	1 220	968												