

# DIN EN ISO 19901-1:2016-04 (E)

Petroleum and natural gas industries - Specific requirements for offshore structures -  
Part 1: Metocean design and operating considerations (ISO 19901-1:2015); English  
version EN ISO 19901-1:2015, only on CD-ROM

## Contents

	Page
<b>Foreword</b>	<b>v</b>
<b>Introduction</b>	<b>vii</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>2</b>
<b>4 Symbols and abbreviated terms</b>	<b>9</b>
4.1 Symbols	9
4.2 Abbreviated terms	12
<b>5 Determining the relevant metocean parameters</b>	<b>12</b>
5.1 General	12
5.2 Expert development of metocean criteria	13
5.3 Selecting appropriate parameters for determining design actions and action effects	13
5.4 The metocean database	14
5.5 Storm types in a region	14
5.6 Directionality	14
5.7 Extrapolation to extreme and abnormal conditions	15
5.8 Metocean parameters for fatigue assessments	15
5.9 Metocean parameters for short-term activities	16
5.10 Metocean parameters for medium-term activities	17
<b>6 Water depth, tides and storm surges</b>	<b>17</b>
6.1 General	17
6.2 Tides	17
6.3 Storm surges	18
6.4 Extreme water level	18
<b>7 Wind</b>	<b>19</b>
7.1 General	19
7.2 Wind actions and action effects	20
7.3 Wind profile and time-averaged wind speed	21
7.4 Wind spectra	21
<b>8 Waves</b>	<b>21</b>
8.1 General	21
8.2 Wave actions and action effects	22
8.3 Sea states — Spectral waves	23
8.3.1 Wave spectrum	23
8.3.2 Directional spreading	23
8.3.3 Wave periods	23
8.3.4 Wave kinematics — Velocities and accelerations	23
8.4 Regular (periodic) waves	24
8.4.1 General	24
8.4.2 Wave period	24
8.4.3 Wave kinematics — Velocities and accelerations	24
8.4.4 Intrinsic, apparent and encounter wave periods	24
8.5 Maximum height of an individual wave for long return periods	25
8.6 Linear wave models	25
8.7 Wave crest elevation	25

<b>9</b>	<b>Currents .....</b>	<b>26</b>
9.1	General .....	26
9.2	Current velocities .....	26
9.3	Current profile .....	27
9.4	Current profile stretching .....	27
9.5	Current blockage .....	27
<b>10</b>	<b>Other environmental factors .....</b>	<b>27</b>
10.1	Marine growth .....	27
10.2	Tsunamis .....	28
10.3	Seiches .....	28
10.4	Sea ice and icebergs .....	28
10.5	Snow and ice accretion .....	28
10.6	Miscellaneous .....	29
<b>11</b>	<b>Collection of metocean data .....</b>	<b>29</b>
11.1	General .....	29
11.2	Common requirements .....	30
11.2.1	General .....	30
11.2.2	Instrumentation .....	30
11.3	Meteorology .....	30
11.3.1	General .....	30
11.3.2	Weather observation and reporting for helicopter operations .....	30
11.3.3	Weather observation and reporting for weather forecasting services .....	31
11.3.4	Weather observation and reporting for climatological purposes .....	31
11.4	Oceanography .....	31
11.4.1	General .....	31
11.4.2	Measurements and observations .....	32
11.5	Data quality control .....	32
<b>12</b>	<b>Information concerning the annexes .....</b>	<b>32</b>
12.1	Information concerning Annex A .....	32
12.2	Information concerning the regional annexes .....	32
<b>Annex A (informative) Additional information and guidance .....</b>		<b>33</b>
<b>Annex B (informative) Northwest Europe .....</b>		<b>82</b>
<b>Annex C (informative) West coast of Africa .....</b>		<b>92</b>
<b>Annex D (informative) Offshore Canada .....</b>		<b>103</b>
<b>Annex E (informative) Sakhalin/Sea of Okhotsk .....</b>		<b>131</b>
<b>Annex F (informative) Caspian Sea .....</b>		<b>155</b>
<b>Annex G (informative) Southern East Asian Sea .....</b>		<b>173</b>
<b>Bibliography .....</b>		<b>195</b>