

# Rating of corrosion factors determining its speed for stationary offshore platforms for oil, gas, coal and other minerals



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# Offshore Platforms



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# Examples of platform elements in corrosion environment



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**Table 1.** Comparative characteristics of the climatic conditions of oil and gas fields of the Black Sea

Parameter	Golitsynskoe	Strelkovoe	Stormovoe
Water temperature difference (seasonal)	23 °C	22 °C	20 °C
Flow rate (max)	100 cm/s	30 cm/s	80 cm/s
Flow rate (min)	15 cm/s	15 cm/s	15 cm/s
Excitement	12m	2m	8m
Salinity	18,15‰	13‰	18,15 ‰
<b>Periodic wetting zone</b>			
Air temperature difference (daily)	42 °C	65 °C	40 °C
Flow rate (max)	100 cm/s	30 cm/s	80 cm/s
Flow rate (min)	15 cm/s	15 cm/s	15 cm/s
Wave height	12m	2m	8m
Salinity	18,15‰	13‰	18,15 ‰
Air humidity	80%	80%	80%
<b>Above-water</b>			
Air temperature difference (daily)	42°C	65°C	40°C
Air humidity	80%	80%	80%
Flow rate (max)	100 cm/s	30 cm/s	80 cm/s



**Table 2.** Corrosion rates for various groups of structural elements of OFP, taking into account their spatial location

Element names	Zones	Field		
		Golitsynskoe	Strelkovoe	Stormovoe
<b>The corrosion rate of the elements, calculated according to the results of diagnostic tests, mm / year</b>				
Columns	underwater	0.0731	0.0641	0.0104
	periodic wetting	0.2468	0.0050	0.2993
	above-water part	0.1029	0.0467	0.004
Braces	underwater	0.1053	0.0196	0.0401
	periodic wetting	0.0532	0.1186	0.0289
	above-water part	0.0103	0.0182	0.0024
Diaphragms	underwater	0.0654	0.0066	0.0280
	periodic wetting	0.0150	0.0052	0.0315
	above-water part	0.0132	0.0063	0.0175



**Table 3.** The values of the coefficients of the influence of natural and climatic factors on the intensity of the corrosion processes of the supporting blocks of OFP in the conditions of the Black Sea deposits

	Coefficients	Columns	Braces	Diaphragms
Underwater	T	0.9545	1.4483	3.0000
	V	8.4000	4.6667	7.0000
	S	-0.6563	-0.6462	-1.2000
Periodic wetting	T	-0.7286	0.0857	-0.1071
	V	-0.1929	0.1143	-0.0714
	S	4.1286	-0.5286	0.7286
Above-water part	T	0.4643	0.0643	-0.3143
	V	0.4500	0.0286	-0.0214
	S	-3.0071	-0.2928	0.2500



**Thank you for your attention!**



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