



## Torsional vibration

Parameters	Standard, admissible limits
<ul style="list-style-type: none"> <li>• <i>Stresses</i> <ul style="list-style-type: none"> <li>- Crankshaft.....</li> <li>- Intermediate and Propellershaft</li> <li>- Generatorshaft</li> <li>PTO-Generator</li> <li>Auxiliary Genset</li> </ul> </li> <li>(*) Stationary power plant</li> </ul>	<p>IACS - WCH (M53, 1986)</p> <p>requested Classifications Society</p>
<ul style="list-style-type: none"> <li>• <i>Torque variation</i> <ul style="list-style-type: none"> <li>- Generatorshaft .....</li> <li>- Gear</li> <li>- Damper: Damping-, Elastic torque</li> <li>- Elastic coupling: Damping-, elast. torque</li> <li>- Hydraulic coupling</li> </ul> </li> </ul>	<p>requested Classification Society (BS 5000 [1980])</p> <p>acc. to supplier prescriptions</p>
<ul style="list-style-type: none"> <li>• <i>Thermal load</i> <ul style="list-style-type: none"> <li>- Damper \ .....</li> <li>- Coupling /</li> </ul> </li> </ul>	<p>acc. to supplier prescriptions</p>
<ul style="list-style-type: none"> <li>• <i>Amplitude</i> <ul style="list-style-type: none"> <li>- At the rotor .....</li> </ul> </li> <li>(*) - Cyclic irregularities (Lamp flickering).....</li> </ul>	<p>requested Classification Society</p> <p>acc. Simons-WCH Limit / EN 50006</p>
<ul style="list-style-type: none"> <li>• <i>Speed variation at the rotor</i>.....</li> </ul>	<p>requested Classification Society or VDMA 6280</p>
<ul style="list-style-type: none"> <li>• <i>Full load speed range</i> <ul style="list-style-type: none"> <li>- For PTO-Generator .....</li> <li>- For Auxilliary Genset</li> </ul> </li> <li>(*) - For stationary power plant .....</li> </ul>	<p>requested Classification Society: <math>\pm 10\%</math> of nominal speed</p> <p>acc. to Grid-frequency variation prescribed by customer (contract)</p>
<ul style="list-style-type: none"> <li>• <i>Electrical quantities</i> <ul style="list-style-type: none"> <li>(*) - Frequency variation .....</li> <li>(*) - Voltage swing</li> <li>(*) - Power swing .....</li> </ul> </li> </ul>	<p>Marine: requested Classification Societies</p> <p>Stationary: VDMA 6280</p> <p>WCH (<math>\pm 10\%</math>)</p>

(\*) only for stationary power plant



### Axial vibration

Parameters	Standard, admissible limits
<ul style="list-style-type: none"><li>• <i>Amplitude</i><ul style="list-style-type: none"><li>- At the free end of the crankshaft .....</li></ul></li></ul>	2T. Mot.: WCH, 25.4.00 4T. Mot.: not relevant
<ul style="list-style-type: none"><li>• <i>Force</i><ul style="list-style-type: none"><li>- At the thrust bearing .....</li><li>(*) - Between rim and rotor shaft (web) ---&gt; Umbrella effect.....</li></ul></li></ul>	No Rule / (Recommend.: F<60% of Prop Thrust) acc. to Prescription of Generator-Supplier
<ul style="list-style-type: none"><li>• <i>Axial detuner</i>.....</li></ul>	Integrated detuner to be installed for all Sulzer RTA-Engines as standard.

(\*) only for stationary power plants



Linear vibration

Parameters	Standard, admissible limits
<ul style="list-style-type: none"> <li>• <i>Engine</i> .....</li> <li>- Turbocharger .....</li> </ul>	VDI 2063 / ISO 10816-6, respectively ac. to Classification Society, if required ABB, 92-10-01 / MET 33 SC / SD
<ul style="list-style-type: none"> <li>• <i>Generator</i> <ul style="list-style-type: none"> <li>- PTO-Generator</li> <li>- Auxilliary genset .....</li> </ul> </li> <li>(*) - Stationary power plant</li> </ul>	ISO 8528-9
•(*) <i>Foundation</i> .....	BS CP 2012
<ul style="list-style-type: none"> <li>• <i>Ship</i> <ul style="list-style-type: none"> <li>- Superstructure .....</li> <li>- Human response .....</li> </ul> </li> </ul>	ISO 6954 BS 6472
<ul style="list-style-type: none"> <li>• <i>Building</i> <ul style="list-style-type: none"> <li>(*) - Structure .....</li> <li>(*) - Human response .....</li> </ul> </li> </ul>	DIN 4150 BS 6472

(\*) only for stationary power plants

## FORM\_WinGD\_2S\_Vibration Standards and Limits\_Marine

### TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2017-12-12	DOCUMENT	First web upload

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