

## Declaration of manufacturer Mechanical gears

Series	<b>456F...</b>
Test Lab / Client	Gerhard Geiger GmbH & Co., Schleifmühle 6, 74321 Bietigheim-Bissingen, Germany
Standard	DIN EN 14203 (D) July 2004, Blinds and shutters – Capability for use of gears with crank handle – Requirements and test methods

### Test data

Family of products	<b>Rolling shutter (EN 13659)</b>		
Gear type	<b>Bevel gear</b>	Reduction ratio i	<b>4:1</b>
Torque $M_s$ [Nm]	<b>12</b>	Efficiency $\eta$ ( $M_s$ )	<b>0,81</b>

### Test results

Forced operation test <b>carried out</b>			
Test effort $P_F$ [N]	<b>60 (10,8 Nm)</b> (Working radius 0,18 m)		
Cycles	<b>50</b>	Passed	<b>YES</b>

Number of achieved cycles	<b>10.000 (endurance class 3)</b>
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**This gear series is in conformity with the requirements of the directive DIN EN 14203 dated July 2004**

### Divergence from the norm:

Due to the strong thermal load at the test rig, the outflow of tiny amounts of lubricants is unavoidable.



Bietigheim-Bissingen, 08.12.2009

Hans-Michael Dangel (General Management)