

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Elastic Couplings

with type designation(s)

CENTAFLEX - Series D/E, Sizes: 160, 198, 220, 275, 350, 425, 560

Issued to

CENTA Antriebe Kirschey GmbH
Haan Nordrhein-Westfalen, Germany

is found to comply with

DNV GL rules for classification – Ships

Det Norske Veritas' Rules for Classification of High Speed and Light Craft

Application :

Products approved by this certificate is accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-06-22**.

Issued at **Hamburg** on **2016-06-23**

DNV GL local station: **Essen**

Approval Engineer: **Axel Albrecht**

for **DNV GL**

Frank Lutz
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Flexible rubber couplings.

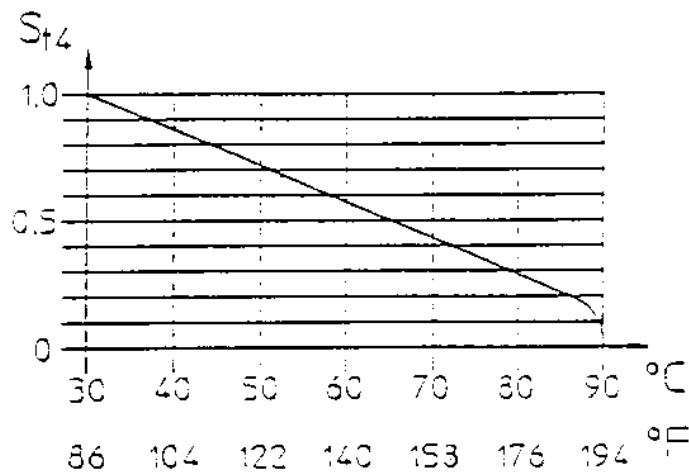
Application/Limitation

For couplings used in applications where no approval of torsional vibration calculations is required the actual rated torque is not to exceed 2/3 of T (T = coupling nominal torque)

Type Approval documentation

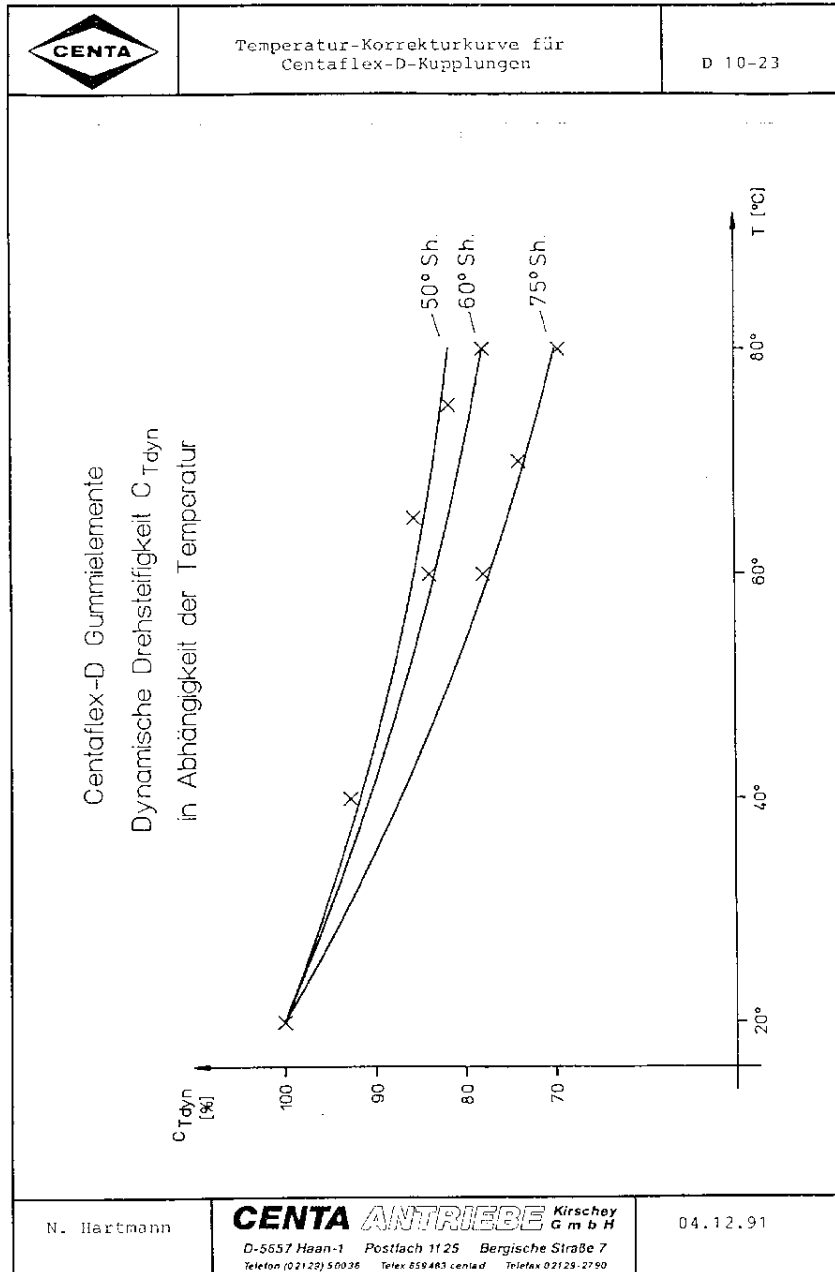
Other conditions:

1. The permissible damping power given on data sheet D10-007 Rev.4 is to be multiplied with the factor S_{t4} as per following diagram.



2. Arrangements mentioned in catalogue such as Roba Rutschnaben, Howdon Brechbolzen, and Bauform 3GZ are subject to special consideration and require individual drawing approval.
3. Dynamic torsional stiffnesses and permissible vibratory torques are to be taken from data sheets D10-007 Rev.4 and D-10-23 (dated 91.12.04). Catalogue values are NOT applicable.

Job Id: **262.1-005876-5**
 Certificate No: **TAM0000087**



Data sheet D-10-23

Tests carried out

Type Testing Report dated 1991 and drawings as per covering letter dated 93-03-03

Job Id: **262.1-005876-5**
Certificate No: **TAM0000087**

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification

Periodical assessment

DNV GL product certificate is not required for couplings according DNV and the common DNV GL Rules for auxiliary duty with rating up to 500 kW and rated torque less than 5 kNm, where torsional vibration calculations are not required.

The Type Approval Certificate No. TAM0000087 is replacing the following DNV and GL Certificates:

- DNV Certificate No. M-12081
- GL Certificate No. 59424-08 HH

END OF CERTIFICATE