



Industry Specification

Fasteners - Technical Specification

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Foreword

This industry standard has been produced by a technical working group representing all parties of the supply chain for fasteners used in wind turbines. Working group participants are:

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TSF – global fastening solutions

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All users must ensure that they have the latest edition of this publication.

Partial Preview

Introduction

This technical specification defines the naming convention and how to interpret the used syntaxes. The specification provides the possibility to cover all DIN, EN and ISO standards related to fasteners, including bolts, studs, nuts and washers. The specification covers dimensions, materials, coatings, supplementary requirements, identification/markings, certificates, packaging requirements and key qualification deliverables. The specification also provides a list of topics that needs to be addressed during qualification of new suppliers / existing suppliers. Requirements towards friction-controlling topcoats applicable for zinc flake coatings, dry-to-touch lubricants for stainless steel products and pre-lubricated products with a wet lubricant are also addressed. It furthermore specifies specific requirements towards type of product, e.g., geometrical requirements. The Wind Turbine Manufacturer reserves the right to perform destructive and non-destructive inspection of the received products by using the inspection procedure described in ISO 3269-1 to verify that the purchased products meet the specified technical requirements.

The standard thread configuration for products according to this specification is the recommended 6g/6H listed in ISO 965-1 and specified in section 5.5. Products according to this specification are to be manufactured with coarse thread and follow the recommendations from ISO 261-1 unless otherwise specified.

The documentation hierarchy for the documents attached to a specific product is as follows:

1. Drawing: where Principal symbol [G] is [Add] (see Section 9).
2. Technical specification(s).
3. Standards (DIN/EN/ISO).

It shall be noted that not all products have a drawing attached. In this case, all requirements from this specification apply.

General requirements

- Section 9 defines identification/marketing requirements for products delivered according to this specification.
- Section 10 defines which certificates are to be delivered along with products delivered according to this specification.
- Section 11 defines the packaging requirements for products delivered according to this specification.
- Section 12 defines additional requirements that shall be covered during the qualification from each Wind Turbine Manufacturer. These requirements shall at any time be present upon request from Wind Turbine Manufacturer unless otherwise agreed.

It must be noted that this document is not valid for HV-sets in accordance with EN 14399 or DAST – Richtlinie 021.