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Guidance on Industry Standard for Medium Voltage Induction Motors (API 541)

GIS 12-204

BP GROUP
ENGINEERING TECHNICAL PRACTICES

Foreword

This is the first issue of Engineering Technical Practice (ETP) GP 12-204. This Guidance on Practice (GP) is based on parts of heritage documents from the merged BP companies as follows:

Amoco

A EL-MT-541-P Electrical—Motors—Above 1000V Induction—Supply Specification

Arco

ES 402-91 Squirrel Cage Induction Motors

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Scope

This document provides guidance on industry standard for design, materials, fabrication, inspection, testing, documentation, and preparation for shipment of induction motors rated above 1000V based on API Standard 541, *Form-Wound Squirrel-Cage Induction Motors—250 Horsepower and Larger, Third Edition, 1995*. Numbering of the following sections and paragraphs corresponds to section and paragraph numbering of API 541 and reflects additions, deletions, and revisions. Requirements of API 541 that are not revised remain applicable.

Section 1 - General

1.6 Referenced publications

Add:

American Society for Testing and Materials (ASTM)

ASTM D2471 Standard Test Method for Gel Time and Peak Exothermic Temperature of Reacting Thermosetting Resins

American Society of Mechanical Engineers (ASME)

ASME B17.1 Keys and Keyseats

ASME B106.1M Design of Transmission Shafting

Section 2 - Basic design

2.1 General

2.1.3 Revise to read:

Motor sound pressure level, determined in accordance with IEEE 85, shall not exceed 85 dBA (reference = 10^{-12} W) measured at 3 feet from enclosure.

2.2 Electrical design

2.2.1 Rating and voltage

2.2.1.3 Revise second sentence to read:

If motor is operated at a 1.15-service-factor-load, temperature rise by resistance shall not exceed 105°C for WP II and 115°C for TEFC.

Insulation Class B rated for 90degC rise Class F rated for 115degC rise See NEMA MG-1 –1998 Table 20.8.2

2.2.2 Stator windings

2.2.2.2 Revise third sentence to read:

Windings shall withstand an external three-phase bolted fault at full load and 110% of rated voltage.

Add:

2.2.2.3 Windings shall be copper.

