1 **Scope**

This Standard provides requirements for the design, manufacture and testing of hoisting equipment suitable for use in drilling and production operations.

This Standard is applicable to the following drilling and production hoisting equipment:

a) hoisting sheaves;
b) travelling blocks and hook blocks;
c) block-to-hook adapters;
d) connectors and link adapters;
e) drilling hooks;
f) tubing hooks and sucker-rod hooks;
g) elevator links;
h) casing elevators, tubing elevators, drill-pipe elevators and drill-collar elevators;
i) sucker-rod elevators;
j) rotary swivel-bail adapters;
k) rotary swivels;
l) power swivels;
m) power subs;
n) spiders, if capable of being used as elevators;
o) wire-line anchors;
p) drill-string motion compensators;
q) kelly spinners, if capable of being used as hoisting equipment;
r) pressure vessels and piping mounted onto hoisting equipment;
s) safety clamps, if capable of being used as hoisting equipment;
t) guide dollies for traveling equipment (e.g. hooks, blocks, etc.);
u) casing running tools;
v) top drive.
9.9.5 Rotary-shouldered Connections

All rotary swivel and power swivel sub connections shall comply with the applicable requirements, including gauging and marking, as specified in API 7-1 and API 7-2. For rotary shouldered connections used in hoisting (non-drill stem) applications see 4.3.8.

9.9.6 Rotary Hose Safety Attachment

Rotary hose gooseneck or S-pipe connections shall be provided with a safety connection lug containing a 28.6 mm (1/8 in.) diameter hole for attaching a safety chain or wire rope sling. The lug shall be designed to accommodate a safety chain or wire rope sling, as specified in API 7K. The lug and its supporting structure shall have a minimum breaking strength of 71.1 kN (16,000 lb) when used with hoses of 101.6 mm (4 in.) internal diameter or less and a minimum breaking strength of 142.3 kN (32,000 lb) when used with hoses of internal diameter greater than 101.6 mm (4 in.).

9.9.7 Swivel Washpipes

Swivel washpipes shall be exempt from the impact requirements of Section 6 and the NDE requirement of Section 8.

9.10 Power Swivels

A power swivel is a device which moves with the travelling blocka hoisting system and is designed to provide rotary power to the top of the drill string for drilling operations. It replaces the rotary swivel and includes a rotary seal and bearing for supporting the drill-string weight.

The bearing-load rating shall be calculated using Equation (13) in 9.9.1.

Pressure testing shall be in accordance with 9.9.2 and 9.9.3.

Power-swivel gooseneck and sub connections, and rotary-hose safety-chain attachments shall be in accordance with 9.9.4.2, 9.9.5, and 9.9.6.

9.11 Power Subs

9.11.1 General

A power sub is a device which moves with the travelling blocka hoisting system and is designed to provide rotary power to the top of the drill string for drilling operations. It attaches to the bottom of the rotary swivel, but does not include a rotary seal or bearing for supporting the drill-string weight.

9.11.2 Power Sub Gooseneck Extension

Power sub gooseneck extensions shall meet the thread and marking requirements of 9.9.4. If a gooseneck extension is used which causes the rotary-hose safety-chain attachment on the rotary swivel to be in an inconvenient location, an additional attachment lug shall be provided. This attachment lug shall meet the requirement of 9.9.6.

9.11.3 Power Sub Connections

Both the upper and lower power sub connections shall meet the requirements of 9.9.5.

9.12 Wireline Anchors

Wireline anchors shall be classed by the rated line pull, in kilonewtons (kN) (Kips).
9.17.5 Quality Control

Surface NDE – (welds only) – All welds shall be inspected using magnetic particle (MP) or liquid penetrate (LP) method in accordance with AWS D1.1.

Volumetric NDE (welds only) – All full or partial penetration welds loaded in tension to 70% or greater of their allowable stress, as determined by design, shall be ultrasonic or radiograph inspected in accordance with AWS D1.1. The manufacturer’s design engineering department shall document the welds which require volumetric NDE.

9.17.6 Marking

Guide dollies are exempt from the requirements in 10.2.

9.18 Casing Running Tool

The casing running tool is attached to the power swivel for means of hoisting, lowering and rotating casing in a well bore. It may have the ability to pick up casing and stab it onto the string. It utilizes the power swivel to rotate, torque, hoist and lower the casing string.

By its nature, the casing running tool is both a hoisting tool and torque tool. It can also provide a means of transferring the drilling fluid and therefore can be subject to pressure from this fluid. All possible combined loads applied to the casing running tool shall be taken into account when calculating stresses. (Reference section 4.3.1)

Axial load design verification testing of casing running tools shall be carried out in accordance with section 5. Torsion design verification testing shall be completed to 1.1 times the tool’s rated torque as a separate test with no applied axial load. The axial and torsion tests shall be performed independently so as to eliminate any possible beneficial effect of combined loading.

Inserts are exempt from mechanical testing and traceability requirements.

Proof load testing shall consist of axial load only and be carried out as per section 8.6. Primary load components may be tested separately so long as the loading complies with section 8.6.

The gripper actuating mechanism shall be functionally tested on each production unit, demonstrating full compliance with design requirements.

Casing running tool sub connections shall be in accordance with section 9.9.5.

9.19 Top Drive

A top drive is either a power swivel or a power sub, typically with integrated pipe handling and hoisting capabilities below the drive. The pipe handler may comprise an elevator, elevator links, link tilt system and a pipe gripper mechanism to assist in making and breaking connections.

10 Marking

10.1 Product Marking

Each item of hoisting equipment shall be marked with “API Spec 8C”, the manufacturer’s name or mark, the relevant PSL number and the rating specified in 10.2. Additional markings shall be applied in accordance with Section 9 and 10.4. Equipment for which supplementary requirements apply shall be marked with the relevant “SR” numbers.