

Gæðaskjal (GSK) GSK-1094
Date of issue: 26.3.2014 Revision no.:2.0
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00-General
General Standard Technical Specification

Doc. no.: NA-00-STS001

This standard technical description is subject to change without prior notice. The most current issue will at all times be located on the Nordural web site, www.nordural.is.

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1 Responsibility

This Standard Technical Specification (STS) is of responsibility of the owner. The revision and date of issue are on the front page.

All deviations from the specifications must be approved in writing by the Owner.

2 Introduction

This document describes the general technical requirements for work performed at Norðurál (NA). All deliveries of work, material and equipment at NA (Grundartangi and Helguvík sites) are subject to international and national standards, rules and regulations.

NA has published Standard Technical Specifications to fulfill NA's requirements and to serve as guidance on how to implement the standards in order to meet these requirements. All requirements described in this document apply to all specific Technical Specifications used by NA. The Technical Specifications neither replace current standards or regulations in Iceland or Europe, nor exempt those in any way.

The objective is to increase personal safety and operational security, as well as conformity and efficiency by limiting the number of technical versions on site and introducing standard procedures where applicable.

In this document the following terms and expressions shall have the meaning hereby assigned to them except where the context otherwise requires:

- Owner: Nordurál an independent legal entity owned by Century Aluminum or a person/organization employed or engaged at any time by Nordurál and authorized by Nordurál to act on its behalf (inspector, supervisor, engineer etc.).
- NA: Norðurál ehf / Norðurál Grundartangi ehf / Norðurál Helguvík ehf
- STS: Standard Technical Specification used at Norðurál.
- AKS: The AKS (or "AKZ System") classification system for plants.
- Work provider: Any person or Organization contracted or hired to provide work. The work provider can either be personnel of Norðurál or a third party contractor.
- IS: The Icelandic language.
- CE: Conformité Européenne (European health & safety product label)
- LOTO: Lock-Out/Tag-Out safety system

3 Scope and Field of Application

3.1 SCOPE Definition

This STS supply general clarifications to more specific STSs used at NA. It defines common technical rules and specifications the Work provider shall without exception follow when working at NA sites or supplying equipment.

3.2 Field of Application

This STS describes the general specifications and rules relevant to all work and equipment provided for NA, regardless if the work or equipment under consideration is in the electrical, mechanical or civil fields.

This STS shall be used in conjunction with more specific STSs on design, manufacture, material quality and workmanship, installation, testing, inspection and identification for Work provided in NA facilities.

Work provided by NA's own workforce is equally subject to this STS.

3.3 Document Conflicts

All STS shall be read in conjunction with relevant standards, specifications and data sheets on the material in question. Any conflicts between referenced documents shall be identified to the Owner in writing for resolution.

4 Standards, References and CE compliance

All equipment, materials, workmanship, design calculations and tests shall be performed in compliance with Icelandic law and standards, as well as EU directives and standards. All equipment shall be CE marked to reflect conformance to EU directives and comply with all relevant European Standards where such standards exist. All initial safety assessments related to CE compliance are subject to Nordural participation and approval.

All components and materials shall comply with the relevant CEN Standards or recommendation, in addition to the requirements detailed in the relevant specifications.

In general the relevance order of standards shall first be ÍST EN standards (EN standards adopted by Iceland), then EN standards and finally IEC standards. Standards from other organizations (DIN, BS) are subject to the approval of the Owner.

List of all current STSs can be found at www.nordural.is/islenska/fyrirtaekid/innkaup/stadlar/

5 General Standard

In this chapter, general requirements for equipment, materials, workmanship, design, calculations and tests as well as approvals, storage, protection and how to handle waste are addressed. All Work performed at NA or for NA is confidential and may be subject to confidentiality constraints.

5.1 Health Safety and Environment

The Work provider shall perform risk analyses and provide all relevant documentation, as requested by the owner.

The Work provider shall be aware of the LOCK OUT/TAG OUT (LOTOV) system that has been implemented at NA for protection against all hazards.

All design and work shall be in accordance with NA environmental policy, NA health and safety policy, NA operational license, current local laws and regulations on environmental matters.

The Work provider is responsible for ensuring that all waste accumulated in connection with the Work is properly disposed from NA's premises each day as directed and according to the NA quality document GSK-886.

5.2 Design, Engineering and Documentation

The Work provider shall use the equipment identification system AKS-Identification System on all documentation and drawings in accordance with a coding framework provided by NA.

SI units shall be used exclusively in all documents, calculations and drawings.

Design prepared and delivered to NA shall be risk analyzed with standard procedures like "What if analyzes" prior delivering to NA if NA requests so. This shall be documented and presented on request to Owner.

Design review meetings shall be held regularly with the Owner to review designs, drawings and risk assessments prior to production of equipment.

For instructions on documents and drawings, refer to NA-Technical documentation specification (unpublished), listing format and requirements of construction- and as-built drawings to be provided for all new construction and modification work.

5.3 Equipment and Materials

All equipment/parts delivered or installed shall be CE marked and suitable for the purpose, see chapter 4. It shall be fully designed and tested and delivered with proper packaging. Material shall be new and of high grade quality, Parts serving similar or same purpose shall as far as possible be of same make and type.

All equipment and material to be used at NA shall be inspected and tested as needed to verify compliance with specifications and standards.

During installation all equipment shall be properly stored and protected. The work provider is responsible for equipment and material until it is handed over to the Owner.

5.4 Site Work and Equipment Installation

The Work provider shall comply with requirements regarding relevant authorization of contractors set by Iceland Construction Authority (IS: Mannvirkjastofnun). Further details regarding relevant authorization are explained in the appropriate/relevant NA STS.

A 'Permit to Work' system (IS: Vinnuleyfi verktaka) is in force at NA. This requires a signed Permit to Work prior to commencement of Work and shall always include information on the work procedures such as JTAs (Job Task Analysis) and Work Hazard Analysis's. The Work Provider shall perform JTOs (Job Task Observations) to ensure compliance.

5.5 Inspections and Commissioning

Prior to contract award, contractors shall present a Commissioning plan describing the commissioning organization, tests and test sheets, commissioning schedule, etc..

Scope of the delivery can be:

1. Supply only:
No installation is included in the procurement
2. Mechanical Completion:
All equipment installed, wired and marked.
3. Practical Completion
This includes completion of POV (Pre-Operational Verification). Verification that all technical-, maintenance-, spare parts- and operational documentation has been delivered, all safety systems are operational, initial settings of end stops, flow rates, etc. are correct. It is ensured that the system is safe to hand over to operations for operational start-up and performance testing.
4. Industrial Completion
This includes startup of the system with operational personnel ending with performance testing and training of operation and maintenance personnel to various degrees as needed.

All stages are subject to inspections and punch lists.