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Foreword

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Introduction

Rail welding is an essential technology in the railway track domain for reducing noise and vibration on rail joints, improving ride comfort and reducing maintenance costs.

Since environments (e.g. geography, deployable resources and energy affairs) differ by region and railway line, rail welding processes have been developed to meet the requirements and conditions of each environment. As a result, various rail welding processes exist, e.g. flash butt welding (FBW), gas pressure welding (GPW), aluminothermic welding (ATW) and enclosed arc welding (EAW).

For this reason, a general rail welding standard on an international level covering conventional rail welding processes has been deemed necessary. This document contributes to the development of railways by ensuring the quality of welded joints in terms of enhancing the reliability of train operation, improving the welding work efficiency and facilitating the introduction of new procedures.

This document covers the ATW requirements for rail welding, which specifies the approval of ATW processes, laboratory tests, requirements for welder and contractor, acceptance of aluminothermic welds in track.

This document is intended to be used in conjunction with ISO 23300-1:2021, which provides the general requirements for each welding process (such as FBW, GPW, ATW and EAW).