

ข้อมูลสถาบันวิจัยและพัฒนาเทคโนโลยีระบบราง (องค์การมหาชน)
สำหรับเผยแพร่บนแพลตฟอร์มแลกเปลี่ยนข้อมูลวิศวกรรมอาเซียน

1. Organization Overview

The Government's 20-Year National Strategy emphasizes the development of rail transport as the backbone of the country's transportation system, with the aim of enhancing economic competitiveness and improving people's quality of life. The Ministry of Transport has therefore continuously accelerated the development of the rail system, including urban mass rapid transit, intercity rail, and high-speed rail. Recognizing the national need to expand rail infrastructure across the country and to ensure that strategic technology development proceeds in the same direction, the Ministry of Transport established the Rail Technology Research and Development Agency (Public Organization), or RTRDA, on 14 July 2021 to respond to these national needs.

The objectives of its establishment are as follows:

1. To prepare the national rail technology strategy and submit it to the Cabinet for consideration.
2. To conduct research and development in rail technology, create rail system innovations, and collaborate with public and private sector agencies to apply research and innovation for practical use.
3. To conduct research and development on rail system standards and rail testing systems, carry out rail system testing, and provide standard certification and quality assessment for use in applications for rail transport business licenses.
4. To cooperate with public and private agencies, both domestic and international, in research, innovation, technology acquisition, exchange, transfer, and development of rail system technology, and to serve as a center for the acquisition, exchange, and transfer of rail technology.
5. To develop rail system personnel and provide training for the certification of knowledge and skills of rail personnel.

6. To establish a rail technology database to collect information on research and innovation, relevant organizations, experts, and other information related to rail technology.

2. Engineering discipline

Railway Engineering

3. Name of the standard, specification, manual, guideline, or document

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
RTRDA	RTRDA-CT-2001:2568	Standard for Sound Absorptive Noise Barriers with Natural Rubber Foam-Based Sound Absorptive Panels for Railway Systems	This standard covers the physical characteristics, acoustic properties, environmental resistance, and test methods of natural rubber foam sound absorptive materials for use as components of sound absorptive noise barriers in railway systems.	Voluntary
Testing Standards for Quality Control of Fresh Concrete for High-Speed Rail Projects				
RTRDA	RTRDA-HSR-CT-4001:2567	Standard for Sampling Fresh Concrete in the Field for High-Speed Railway Projects	This standard covers the procedures for sampling fresh concrete delivered to construction sites for testing and quality control to verify compliance with specified requirements in high-speed railway construction.	Mandatory
RTRDA	RTRDA-HSR-CT-4002:2567	Standard for Slump Test of Fresh Concrete for High-Speed Railway Projects	This standard covers the test method for determining the slump of fresh concrete as an indicator of concrete workability. The test may be performed in both laboratory and field conditions by measuring the decrease in height of the concrete specimen relative to the height of the slump cone.	Mandatory
RTRDA	RTRDA-HSR-CT-4003:2567	Standard for Flow Table Test of Fresh Concrete for High-Speed Railway Projects	This standard covers the test method for determining the flow spread of fresh concrete as an indicator of concrete workability. The test may be performed in both laboratory and field conditions and is applicable to highly flowable concrete.	Mandatory
RTRDA	RTRDA-HSR-CT-4004:2567	Standard for Temperature Test of	This standard covers the test method for measuring the temperature of	Mandatory

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
		Fresh Concrete for High-Speed Railway Projects	fresh concrete as part of quality control procedures for fresh concrete. The measured temperature represents the temperature at the time of testing and may not be indicative of the temperature of the fresh concrete later.	
RTRDA	RTRDA-HSR-CT-4005:2567	Standard for Bleeding Test of Fresh Concrete for High-Speed Railway Projects	This standard specifies the test method for determining the bleeding of fresh concrete. Bleeding refers to the upward movement of a portion of mixing water to the concrete surface caused by the settlement of aggregates and cementitious materials. The bleeding value is used to evaluate the characteristics of fresh concrete.	Mandatory
RTRDA	RTRDA-HSR-CT-4006:2567	Standard for Air Content Test of Fresh Concrete by the Pressure Method for High-Speed Railway Projects	This standard specifies the test method for determining the air content of fresh concrete, excluding any air that may exist within the internal voids of aggregate particles as measured by the pressure method, excluding any air that may exist within the internal voids of aggregate particles.	Mandatory
Standards Specifications for Concrete Used in High-Speed Rail Projects				
RTRDA	RTRDA-HSR-CT-2001:2568	Standard Specifications on Properties of Materials for Concrete Used in High-Speed Rail Projects	This standard defines material requirements for concrete mixtures used in high-speed rail projects. It does not cover special concrete such as lightweight, fiber-reinforced, or ultra-high-performance concrete,	Voluntary
RTRDA	RTRDA-HSR-CT-2002:2568	Standard Specifications on Properties of Concrete Used in High-Speed Rail Projects Related to Load bearing and Durability Performances	This standard covers concrete mixture proportioning and required concrete properties for high-speed rail projects. It does not apply to lightweight, fiber-reinforced, or ultra-high-performance concrete	Voluntary
RTRDA	RTRDA-HSR-CT-2003:2568	Standard Specifications for	This standard specifies the requirements for quality control of concrete in high-speed rail projects,	Voluntary

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
		Quality Control of Concrete for High-Speed Rail Projects	It does not apply to lightweight, fiber-reinforced, or ultra-high-performance concrete	
RTRDA	RTRDA-HSR-CT-4007:2568	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method) for High-Speed Rail Projects	This standard is used to assess the potential for alkali-aggregate reaction in mortar test specimens within a 16-day test period, including specimen preparation and expansion measurement periods, for testing in high-speed rail projects.	Voluntary
RTRDA	RTRDA-HSR-CT-4008:2568	Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction for High-Speed Rail Projects	This standard is used to assess the reaction between alkalis in concrete and silica in aggregates in concrete mixtures containing pozzolanic materials or ground granulated blast-furnace slag, for testing in high-speed rail projects.	Voluntary
RTRDA	RTRDA-HSR-CT-4009:2568	Standard Test Method for Creep of Concrete in Compression for High-Speed Rail Projects	This standard covers the creep testing of molded cylindrical concrete specimens under continuous axial compressive loading. The method is suitable for concrete containing coarse aggregate with a maximum size not exceeding 50 mm, for testing in high-speed rail construction projects.	Voluntary
RTRDA	RTRDA-HSR-CT-4010:2568	Standard Test Method for Weight Change of Mortars Exposed to Magnesium Sulfate Solution for High-Speed Rail Projects	This standard specifies the test method for determining the change in mass of mortar specimens exposed to a magnesium sulfate solution. The test specimens shall be prepared in accordance with the applicable TIS standard before being immersed in the magnesium sulfate solution, for testing in high-speed rail projects.	Voluntary
RTRDA	RTRDA-HSR-CT-4011:2568	Standard Test Method for Free Expansion of Expansive Concrete for High-Speed Rail Projects	This standard is used to determine the free expansion of expansive concrete containing an expansive agent as a mineral admixture. It covers only expansive agents that cause expansion after the concrete has reached final setting, with the concrete specimens being	Voluntary

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
			unrestrained both internally and externally. This test is intended for use in high-speed rail projects.	
Standards for Rolling Stock Components and Battery Charging Infrastructure				
RTRDA	RTRDA-EC-6001:2568	Standard Test Method for Battery – Powered Rail Vehicle – Electromagnetic Compatibility	This standard specifies the limits for electromagnetic emissions and the immunity requirements for battery-powered rail vehicles used in urban and intercity operations. It covers EMC testing requirements, including power input and output interfaces such as AC/DC charging connectors.	Voluntary
RTRDA	RTRDA-EC-6002:2568	Standard Test Method for Battery – Powered Rail Vehicle – Charging Station	This standard provides guidelines for testing battery charging stations for battery-powered rail vehicles in Thailand. It applies to tests supporting the production and installation of charging stations for various rail transport systems, including intercity rail, commuter rail, and mass rapid transit.	Voluntary
RTRDA	RTRDA-EC-6003:2568	Standard Test Method for Battery – Powered Rail Vehicle – Traction Battery	This standard provides guidelines for testing batteries used in battery-powered rail vehicles in Thailand.	Voluntary
RTRDA	RTRDA-RS-6001:2568	Standard Test Method for Battery – Powered Rail Vehicle - Noise	This standard specifies noise emission limits and acceptable noise level criteria for battery-powered rail vehicles used in urban and intercity operations. It covers noise testing related to the train propulsion system on the track, including stationary noise, dynamic noise, interior noise, and exterior noise. The standard also includes time-domain noise analysis to support the assessment of noise impacts on communities and the environment.	Voluntary
RTRDA	RTRDA-RS-6002:2568	Standard Test Method for Battery – Powered Rail Vehicle - Vibration	This standard covers testing requirements for passenger vibration caused by the operation of battery-powered rail vehicles on tracks in urban and intercity services. It includes interior vibration testing and	Voluntary

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
			analysis of vibration effects on passenger health and ride comfort.	
Standards for Welding				
RTRDA	RTRDA-CT-7001:2568	Recommended General Standard for Rail Head Repair Welding by Arc Welding Process	This standard provides guidance for the repair welding of damaged railheads using electric arc welding for pearlitic carbon–manganese steel rails, to ensure repairs comply with internationally recognized requirements.	Voluntary
RTRDA	RTRDA-CT-6001:2568	Testing Standard for Qualification of Rail Head Repair By Arc Welding Process	This testing standard is intended for the qualification of railhead repair welding using electric arc welding for pearlitic carbon–manganese steel rails. It aims to verify weld quality and mechanical integrity in accordance with service requirements, as well as the competency of welders performing the prescribed welding procedures.	Voluntary
RTRDA	RTRDA-CT-6002:2568	Standard for Non-Destructive Testing of Rail Welds - Visual Testing	This standard specifies visual inspection methods for railway rail welds, including the examination of surface discontinuities in welds and heat-affected zones, as well as rail alignment at welded areas. It also establishes acceptance criteria for surface discontinuities and alignment tolerances based on visual inspection.	Voluntary
RTRDA	RTRDA-CT-6003:2568	Standard for Non-Destructive Testing of Rail Welds - Magnetic Particle Testing	This standard specifies magnetic particle testing methods for railway rail welds, including the detection of surface discontinuities in welds and heat-affected zones. It also establishes acceptance criteria for weld surface discontinuities identified through magnetic particle testing.	Voluntary
RTRDA	RTRDA-CT-6004:2568	Standard for Non-Destructive Testing of Rail Welds - Ultrasonic Testing	This standard specifies ultrasonic testing methods for railway rail welds, including the detection of internal discontinuities in welds and heat-affected zones. It also establishes acceptance criteria for	Voluntary

Standard body	Standard code	Standard title	Scope/Key Areas	Implementation & Compliance
			discontinuities identified through ultrasonic testing.	

4. Official references, such as documents or websites

RTRDA website: <https://www.rtrda.or.th/>