



" International Certification in NDT (ICN) from ISNT "

Diwakar Joshi,

Member, WG 1- ICNNDT

**Indian Society for Non – Destructive Testing
INDIA**

NDT in Industry

- We all know that non-destructive testing plays an important role in Quality control, Quality Assurance and reliability of the products and systems.
- Different NDT/NDE methods have evolved in the last few decades and the list is ever increasing.
- These cater to various industries in sectors like Manufacturing, Nuclear, Defence, Power, Automotive, Railways, Oil and Gas, Aerospace, Infrastructure, Construction, Shipping and so on.

- NDT tells you about the soundness of the material. Unsoundness creates a compromise with integrity, leading to failures and safety issues, which is NDT's main concern.
- The success of NDT is in the implementation of right procedures, having right calibrated equipment and using qualified and certified manpower.

Qualification and Certification

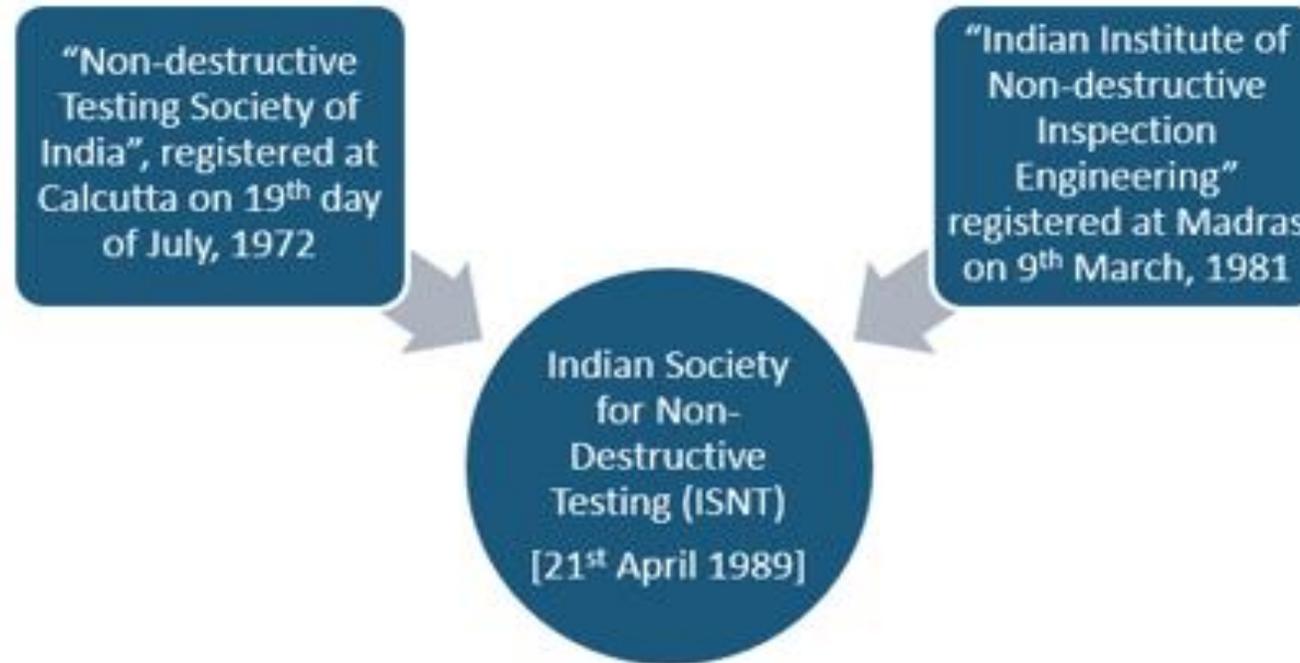
- Qualification and Certification of NDT operator plays a crucial role in the industry.
- Certified individuals would do good NDT and would be successful only when they know what they are doing, when they accept or reject knowingly and knowledgeably, when they know not just the technique but the limitations of the technique, the equipment, the consumables, and their own limitations.

- The certification examination they passed is a testimony of their qualification.
- They can do a good job not because they have just passed an examination, but because they have undergone a robust training program.
- These technicians are 'made' by training, and this is what authorized training centres ensure.

NCB and ISNT

- National Certification Board of Indian Society for Non-destructive Testing (NCB-ISNT) has recently launched the certification scheme ICN – International Certification in NDT.
- ISNT's basic objective is to promote NDT science and Technology in India and abroad. ISNT considers that Training and Certification is the key parameter in the same. Hence, NCB was formed 25 years back to standardize the certification examinations.

INDIAN SOCIETY FOR NON- DESTRUCTIVE TESTING



It is a non-profit organization and is registered under the Tamil Nadu Societies, Registration Act, 1975 (Tamil Nadu Act 27 of 1975) Regd. No.49 of 1981

ISNT

Objective

- To promote the awareness of NDT Science and Technology through education, research and exchange of technical information within the country and internationally to its members and other professionals using NDT.

Strengths

- The family of ISNT has more than 6000 strong members.
- It is a diverse and dynamic family of professionals representing NDT technicians, scientists, engineers, researchers, manufacturers and academicians – all dedicated to improve product safety and reliability.
- These specialists represent virtually every industry and discipline that may benefit from NDT technology.

Resources

- ISNT is the society for NDT professionals and practitioners which offers invaluable resources, information and linkages for industrial quality development and professional development to its members.
- ISNT holds periodic seminars and workshops on topics relating to NDT methods and applications, as well as exhibitions displaying cutting edge NDT products and services.

Journal of Non-Destructive Testing & Evaluation

KEY Publications & Points

- Quarterly publication
- 4-6 papers and articles in each issue
- Details of Boards of ISNT
- Details of activities carried out by various chapters
- Upcoming meetings and programs

Online submission, reviewing, publication and archiving at

URL: <https://jnde.isnt.in>

Current Issue

Vol 19, No 4 (2022): Journal of Non Destructive Testing and Evaluation (JNDE), December 2022

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Issue Description

This special issue of JNDE published four research papers on NDE 4.0. This issue was released during a special session conducted in the Conference & Exhibition on NDE (NDE 2022) held on 24-26 Nov 2022 at Gandhinagar, Gujarat, INDIA

Journal of Non-Destructive Testing and Evaluation (JNDE), Volume 19, Issue 4, December 2022

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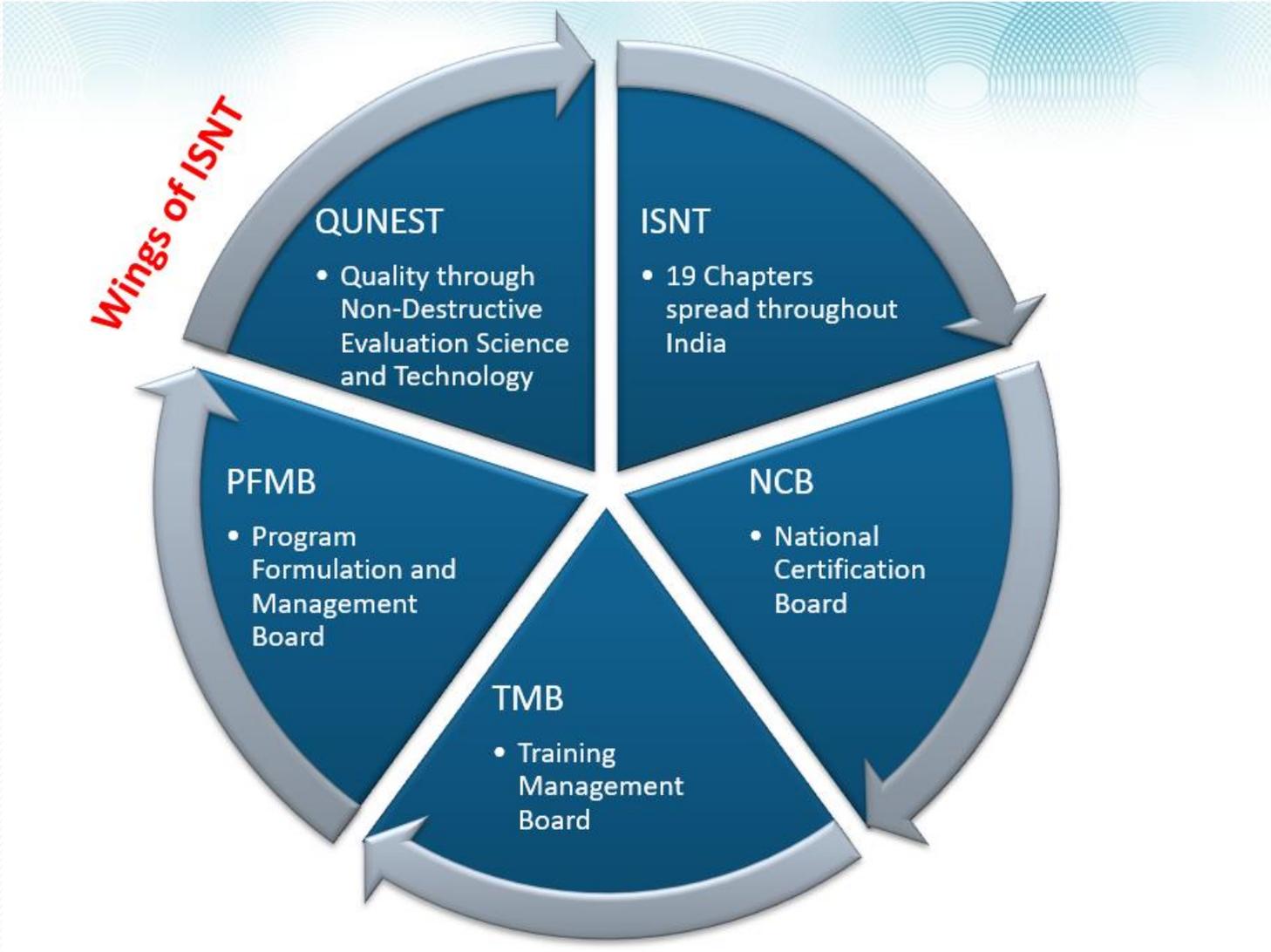
International linkage -

- Member of ICNDT (International Committee on NDT).
- Federation of Asia Pacific Region Countries was formed in Nov 2013. India is the one of the founder member.
- ISNT Conducted two benchmark events
- 14th World Conference on NDT (WCNDT) Dec 1996, New Delhi.
- 14th Asia Pacific Conference on NDT (APCNDT) Nov 2013, Mumbai.

- ISNT has association with other International societies.
- Associate member of European Federation for NDT (EFNDT).
- Member of Asia Pacific Federation for NDT (APFNDT).
- Liaison Member of International Society for Condition Monitoring (ISCM).
- Member of Engineering Council of India (ECI).

- ISNT has active association or has MOU with other NDT societies.
- Australian Institute for NDT (AINDT).
- French Confederation for Non-Destructive Testing (COFREND).
- Korean Society for NDT (KSNT).
- The British Institute of Non-Destructive Testing (BINDT).
- American Society for Non-destructive Testing (ASNT).

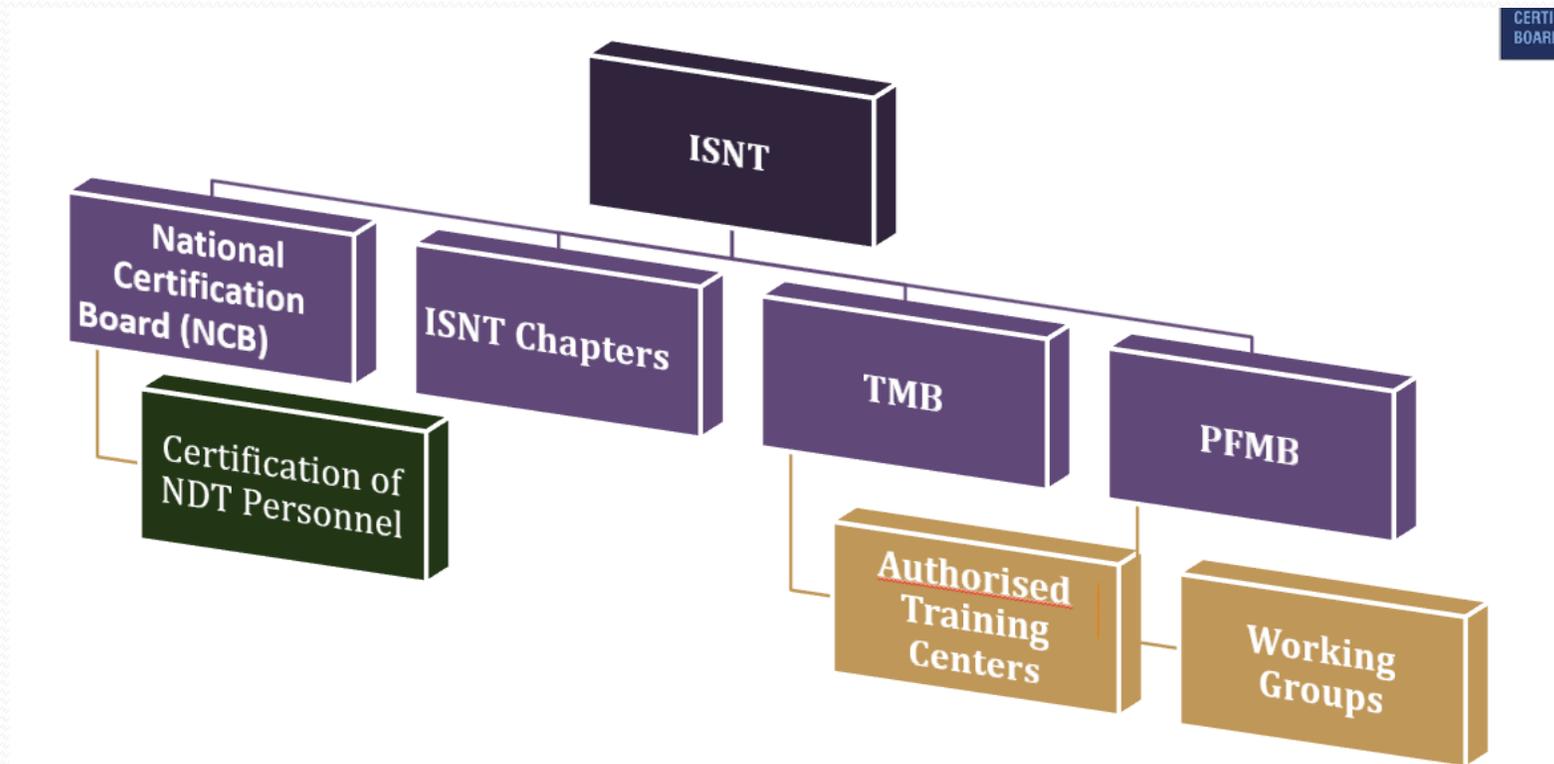
- ISNT conducts many technical lectures, seminars etc. throughout the year.
- The biggest event is the Annual Conference and Exhibition on Non Destructive Evaluation, which is a global event.
- This year the 34th conference NDE-2024 is planned in Dec 2024 at Chennai, India with the theme **“Imagine, Innovate, Ignite, Insight”**
- The next major international event is the ‘3rd International Conference on NDE 4.0’, which will be hosted in Bangalore, India in March 2025.



ISNT – 19 Chapters all over India



Structure of ISNT



ISNT Chapters

There are 19th Chapters all over India, who are promoting ISNT activities with the help of webinars, local seminars, Training programs, Technical lectures, Field trips, Industry workshop, College training programs etc.

TMB

The Training Management Board (TMB) of ISNT has sole responsibility to manage all the training related activities and policies for the certification schemes of ISNT.

PFMB

The PFMB is working with the following objectives :

To conceptualize, formulate and organize various non-certification programs such as Webinars, Workshops, Conferences, Seminars etc. to create platform for constant interaction with ISNT members, meet the requirement of industry, academia and research community.

To interact with other international NDT societies, National technical societies to formulate and organize joint programs.

NCB

The National Certification Board is a non-profit body formulated by National Governing Council of Indian Society for Non-destructive Testing. National Certification Board is the sole certification body in India for certification of personnel related to Non-Destructive Testing (NDT). It initiates, maintains, promotes and administers the national certification scheme according to the Indian Standard IS 13805:2004 and its own scheme 'International Certification in NDT (ICN)', which meets the requirement of ISO 9712:2021.

The National Certification Board includes eminent representatives from academic institutes, research centres, industries, Government nodal ministries, public sector undertakings, private sector, other related societies or institutes, insurance bodies, third party inspection agencies etc.

NCB-ISNT registered under ICNDT MRA Schedule 2



**INTERNATIONAL COMMITTEE FOR
NON-DESTRUCTIVE TESTING**
The World Organisation for NDT

**ICNDT Multilateral Recognition Agreement (MRA)
for Personnel Certification in NDT
Certificate of Registration**

National Certification Board of Indian Society for NDT (India)

The above named NDT Personnel Certification Body (PCB) has satisfied all of the eligibility criteria for registration under the ICNDT Multilateral Recognition Agreement (MRA) for PCBs, including having undertaken to abide by the ICNDT Code of Practice, and has been nominated and accepted for registration within the terms of the Agreement signed by those Members of the International Committee for NDT (ICNDT) listed in Schedule 1 to the Agreement.

The Personnel Certification Body may therefore announce that holders of its certificates issued under these arrangements are certificated by a PCB which is registered by the ICNDT as meeting the requirements of the applicable Standards (including ISO 9712:2012 and ISO/IEC 17024:2012) and Technical Documents referenced in the schedule of conformity (scope) issued by the accreditor and/or the ICNDT.

A copy of the MRA, including a list of the signatories and a schedule of those certification bodies satisfying the criteria for registration, is available at www.icndt.org and from all parties that are signatory to the Agreement.

All signatories to the Agreement, and all PCBs registered under the Agreement, are bound to promote the recognition and acceptance of the certificates issued by all other ICNDT Registered NDT Personnel Certification Bodies.

Signed for ICNDT



Chairman

Initial registration date: 2 August 2021
This certificate number: 4 (2021)
Issue date: 2 August 2021
Expiry date: 2 August 2024

Disclaimer: ICNDT accepts no liability for the use of certification awarded by PCB registered under the MRA. In accordance with ISO 9712 the responsibility for the quality of NDT rests with the employer of the certificated person.

Secretariat: The British Institute of NDT, Midsummer House, Riverside Way, Bedford Road, Northampton NN1 5NX UK
Tel: +44 1604 438300 Fax: +44 1604 438301 Email: gensec@icndt.org
The ICNDT is registered as a legalised Association with its seat in Vienna, Austria.
ICNDT Registered Office: 1230 VIENNA, Jochen-Rindt-Strasse 33
Chair: S K Babu Email: chairman@icndt.org

Accreditation Certificate issued by NABCB - valid till 18 May, 2027


**National Accreditation Board
for Certification Bodies**


Accreditation Certificate

NABCB
hereby confirms that

**National Certification Board
(Indian Society for Non-Destructive Testing)**
Modules 60 & 61, 3rd Floor,
Readymade garment Complex,
SIDCO Industrial Estate, Guindy,
Chennai-600032, India

complies with

**NABCB Accreditation Criteria for Certification Bodies
(ISO/IEC 17024:2012)**
to carry out

Certification of Persons

The Scope of Accreditation is described
in the accompanying Schedule(s)

Accreditation Certificate No.: PR 005
Date of Initial Accreditation : May 19, 2020
Date of Last Renewal : June 28, 2023
Validity of Accreditation : May 18, 2027

June 28, 2023
Issue Date
(Please refer <http://nabcb.qs.org.in> for validity of the certificate or contact NABCB for any related queries)


(Rajesh Maheshwari)
Chief Executive Officer

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**National Accreditation Board
for Certification Bodies**


Schedule
(Scope of Accreditation)

**National Certification Board
(Indian Society for Non-Destructive Testing)**

Certification of Persons

Description of Personnel Certification Scheme	Standards/Regulations/ Normative document(s)
International Certification in NDT (ICN) Scheme for Qualification and Certification of Non-Destructive Testing Personnel as per ISO 9712:2021	NCB/ICN Scheme (ISO 9712)/R- 2 Ultrasonic Testing (Level 1, Level 2, Level 3) - Butt Weld Joint in plates and vessels - Butt Weld Joint in pipes - Casting - Forging - Tubes/Pipes - Wrought products (Plates, Bars & Rods) Magnetic Testing (Level 1, Level 2, Level 3) - Weld - Casting - Forging - Tubes/Pipes - Wrought products (Plates, Bars & Rods) Penetrant Testing (Level 1, Level 2, Level 3) - Weld - Casting - Forging - Tubes/Pipes

June 28, 2023
Issue Date
(The schedule must be accompanied by the Accreditation Certificate No. PR 005 valid upto May 18, 2027)


(Rajesh Maheshwari)
Chief Executive Officer

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**National Accreditation Board
for Certification Bodies**


Schedule
(Scope of Accreditation)

**National Certification Board
(Indian Society for Non-Destructive Testing)**

Description of Personnel Certification Scheme	Standards/Regulations/ Normative document(s)
	- Wrought products (Plates, Bars & Rods) Visual Testing (Level 1, Level 2, Level 3) - Weld - Casting - Forging - Tubes/pipes - Wrought products (Plates, Bars & Rods) Radiographic Testing (Level 1, Level 2, Level 3) - Weld - Casting Radiographic Testing-Film Interpretation (Level 2) - Weld - Casting

June 28, 2023
Issue Date
(The schedule must be accompanied by the Accreditation Certificate No. PR 005 valid upto May 18, 2027)


(Rajesh Maheshwari)
Chief Executive Officer

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Role of NCB-ISNT and TMB in ICN

- Training Management Board (TMB) is doing the important job of standardizing training all over India.
- TMB has multiple tasks of developing training material, Train the Trainers Program, practical notes, mock-up papers etc.
- It also draws up training institute requirements and assesses them through audits for accreditation.
- So far, 4 centers have been accredited, Insight Quality Services and ISNT's Mumbai Chapter in west, ANSA in south and Satyakiran in north.

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- Training environment shall be appropriate and shall meet statutory, regulatory and TMB requirements.
 - Compromise in safe working environment will lead to suspension of authorization.
 - Training centers shall basically fill the gap between required and existing competence requirements of the candidate.

- Training centers shall have full control at each stage like defining training needs, designing and planning training, providing training, and evaluating the outcome of training.
- The training center shall have a quality management system which is conforming to ISO 9001 or similar quality management system.
- ‘Train the trainers’ program desirable for instructors to acquire the skill of imparting their knowledge more efficiently and effectively.

- NCB-ISNT conducts examinations.
- NCB-ISNT conducted examiners' workshop in 1999, 2013, 2017, and qualified about 60 examiners.
- NCB-ISNT conducted a question bank development project in 2015.

The ICN Scheme - General

- For NDT qualification and certification, until recently, India had a domestic scheme based on the Indian Standard IS 13805, General Standard for Qualification and Certification of Non-Destructive Testing Personnel.
- We did not have our own international scheme.
- However, ISO 9712, Non-destructive testing - Qualification and Certification of NDT Personnel, being an international standard, gained popularity.
- The need to have an international scheme based on ISO 9712 was seen.

- The scheme is for International Certification in NDT.
- A central certification scheme – the first indigenous such scheme in India.
- NCB-ISNT was audited as per ISO/IEC 17024:2012 General requirements for Bodies operating Certification of Persons, and Accredited by National Accreditation Board for Certification Bodies – Quality Council of India.

- Scheme based on ISO 9712:2021, Non-destructive testing, qualification and certification of NDT personnel.
- Scheme formally launched during NDE 2023 in the presence of ICNDT Secretary Mr. David Gilbert.
- Scheme is registered under MRA (Multilateral Recognition Agreement) Schedule 2 of ICNDT, and valid in several other countries that are part of MRA.
- So far 19 certificates in different methods are issued with this scheme.
- More than 5000 certificates are issued under IS 13805.

ICN Scheme Launching at NDE 2023



The ICN Scheme - Features

- The scheme was originally launched in a limited capacity in the welding sector.
- In 2021, edition 2021 of ISO 9712 was adopted, and multiple sectors were covered.
- Now, Sectors covered are - Weld, Casting, Forging, Tubes/Pipes, Wrought Products (Plates, Bars & Rods). First multi-sector exam was conducted in Dec 2023, though first welding sector exam was conducted in Feb 2020.
- Methods covered currently – ET, LT, MT, PT, RT, TT, UT, VT.
- NABCB accreditation is for RT, PT, UT, MT, VT
- Future Plan to add DR, PAUT and TOFD

- Levels – Level 1, 2, and 3.
- The basic objective of the scheme is to make better and more competent NDT personnel.
- Training can be conducted by Authorized Training Centers. Examinations are conducted by NCB.
- The risk of the same body involved in training and examinations is minimum now due to two separate bodies.

- Candidates' eligibility based on education, training, experience, vision.
- Examinations :
 - Level 1 - General, Specific, Practical.
 - Level 2 - General, Specific, Practical, Instruction writing.
 - Level 3 - Basic, Method (General, Specific, Procedure).

- Minimum number of questions – General – 40, Specific – 30.
- Passing – minimum 70%.
- Certificate validity – 5 years.

- Other requirements for E learning / Online learning, remote training conducted away from the center or at clients' premises are also mentioned.
- We all know that quality cannot be inspected in the product, however, it has to be built in. NCB's examinations, TMB managed training, ICNDT Question banks and other features ensure this.

- Additional techniques and limited scope are specified in methods ET, LT, RT and UT.
- Responsibilities of all entities and persons are specified.
- Minimum educational qualification specified for Level 1 and 2 is school pass out with science and mathematics and for Level 3 it is Diploma in Engineering or two years science or engineering pass out. Level 3 minimum educational qualification can be compensated by higher experience. 9712 does not specify any minimum educational qualification.



Certificate No: NCB/ICN/022

This is to certify that

SHREENIWAS P. DEODHAR

has demonstrated the proficiency in carrying out
Non-Destructive Testing
 in accordance with ISO 9712:2021 as prescribed
 in the
International Certification in NDT
 scheme of the National Certification Board of
 Indian Society for Non-Destructive Testing



Certification in the following method and sector:

S. No.	Method	Sector	Level	Date of Initial Certification	Valid till
1	Penetrant Testing	Multi Sector (welding, casting, forging, tubes/pipe & wrought products)	2	28-12-2023	27-12-2028

Candidate

Chairman - NCB

Chief Controller of Examination - NCB

Note:
 The certificate is issued by National Certification Board, Indian Society for Non-destructive Testing
 The authenticity of this certificate can be verified online through
 The certificate is valid subject to satisfactory Vision Test of candidate carried out annually as per NCB/ICN Scheme (ISO 9712) R-2
 NCB-NDT has been Accredited by NADCB, DCI in accordance with ISO 17024:2012, file certificate Number: F0035

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- Theory training can be delivered through various modes, but practical training has to be delivered through face-to-face instructor-led mode only.
 - Conditional direct access to Level 2 or Level 3 is allowed.
 - Conditional possible reductions in training duration are allowed, with total reduction not to exceed 50 % of the training duration.

- Level 1 and 2 can gain part experience after the certification examination, with certificate withheld till evidence of completion of experience. 25% of the experience is required before taking the exam.
- Weightage factors for grading Level 1 and 2 practical examinations are specified.
- Certificates issued by other certification bodies may be considered conditionally by NCB-ISNT.

- 
- An examiner shall not be permitted to examine any candidate who is working (permanently or temporarily) in the same facility as the examiner under no condition.
 - There is no criteria for minimum age for certification.

Highlights

- Scheme from India that has been included in MRA.
- All Sectors covered.
- Additional techniques covered.
- The risk of the same body involved in training and examinations is minimum now due to two separate bodies.
- Candidates' eligibility also based on some minimum education.

- There is no criteria for minimum age for certification.
- 25% of the experience is enough to take examination.
- An examiner is not permitted to examine any candidate who is working in the same facility as the examiner under no condition.
- TMB draws up training institute requirements and assesses them through audits for accreditation.

- 
- ‘Train the trainers’, an in-house developed program, desirable for instructors to acquire the skill of imparting their knowledge more efficiently and effectively.
 - Three examiners’ workshops conducted.
 - Question bank development project conducted.

Conclusion:

With well – Structured Training and effective Examinations ICN scheme is gaining popularity in India and abroad and will serve as a reliable Central Certification Scheme in coming future.



3rd International Conference & Exhibition on NDE 4.0



Program at A Glance

March 3, 2025

Monday

9:00 am to 6:00 pm: Short Course 1 and 2 running in parallel

March 4, 2025

Tuesday

9:00 am: Conference & Exhibition Inauguration

10:00 am to 6:00 pm: Main Conference Day 1

6:30 pm: Cultural Program

8:00 pm: Networking Dinner

March 5, 2025

Wednesday

9:00 am to 6:00 pm: Main Conference Day 2

7:00 pm: Gala Dinner

March 6, 2025

Thursday

9:00 am to 5:00 pm: Main Conference Day 3

5:00 pm: Valedictory Function



3rd International Conference & Exhibition on NDE 4.0

3 - 6 March, 2025
Bengaluru, India

Welcome to INDIA





Thank you!