



Deliverable D7.6

Report on the contribution to standards

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¹ PU = PUBLIC

PP = Restricted to other programme participants (including the Commission Services)

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Abbreviations and acronyms

BAT	Best Available Techniques
BREF	Best Available Techniques (BAT) Reference Document
BT	Technical Board
CEN	European Committee for Standardization
CEN	European Committee for Standardization
CWA	CEN Workshop Agreement
EFTA	European Free Trade Association
EU	European Union
ISO	International Standards Organization
MNPs	Magnetic Nanoparticles
STM BREF	SURFACE TREATMENT OF METALS AND PLASTICS
TCs	Technical Committees
TR	Technical Reports
TS	Technical Specifications
TWG	Technical Working Group
UK	United Kingdom
UNI	The Italian Body for standardization

1. Introduction

Deliverable 7.6, presents the standardization activities of PureNano project. The ultimate goal of PureNano project was the fast and low-cost purification of spent plating baths to promote the aspects of circular economy and reuse of secondary raw materials, as plating solutions and metal ions. The successfully implemented activities can be summarized to the following: (a) Production of functionalized MNPs; (b) Optimization and installation of two different purification plants; (c) Reuse of secondary materials. The task relative to standardization matters are mainly under WP7, Task 7.4. and in total the corresponding Deliverables (7.1, 7.6, 7.8, 7.9), including the current one, provide the standardization landscape and applicable standards that are relative to PureNano materials and technologies, along with the contribution of project results to the standards. This deliverable consists of two parts, the first one gives an overall description of the standardization bodies published standards and work under development in the relative field of interest, and the second one, that provides information on PureNano contribution activities to the standards.

To this context, the relation of the participated Standardization Body, ASFIMET, with the relative representative bodies is described. A thorough description of implemented activities of ASFIMET contributing to relative to PureNano technologies, are also part of this deliverable. Finally, the activities regarding PureNano contribution to new standards developments in specific topics to promote the inclusion of the outcomes of the project in new or future standards in order to increase the impact of the project, are also presented hereafter. Moreover, ASFIMET taking advantage of the ongoing works of the standardization sectors during the implementation of the project, promoted successfully PureNano project from the early beginning, and prepared the needed documentation to submit a technical proposal for the integration of the PureNano technology into the standardization process into CEN Workshop Agreement (CWA). To this end, PureNano technology will be proposed and considered as a BAT in the next BREF.

2. Standards and Standardization bodies

2.1 General

A standard can be described as a technical document that specifies requirements for a material, a system or service, or describes in detail a particular method, procedure or best practice. The process to develop a standard, includes the consensus share of knowledge among technical experts, suggested by interested parties and relevant stakeholders. The technical experts are organized in groups, in particular, Technical Committees (TCs) established by the Technical Board (BT). TCs are also subdivided in Subcommittees (SCs) or Working Groups (WGs), which have different level of responsibilities and rights, however, the detailed analysis of these bodies is out of the scope of this Deliverable.

There are many and different standardization bodies operating at National, Regional and International level, and sometimes there are more than one standardization body in the same level, covering though different fields. In this deliverable one National and one regional standardization body will be presented, to be in line with the scope of the current document. To this sense there are also *different kinds of standardization documents*. Many of them are published with different code, which is indicative of the organization under it was developed. There are also other type of documents referring as Workshop Agreements (CWA), Technical Specifications (TS), Technical Reports (TR), etc. As for the standardization bodies, two documents, CWA and BREF (Best Available Techniques Reference document) will be analyzed further in this document.

2.2 Standardization bodies

2.2.1 Italian National Unification - UNI

UNI, the Italian National Unification created on 26th of January 1921, by the National Association of Manufacturers in Mechanics, initially as “UNIM”. Later on, in 1928, its activities extended to all other sectors (except electrical) and the acronym changed to UNI. UNI operates as a non-profit association and acquired legal status by Presidential Decree in 1955. Officially, UNI’s role recognized in

Italy and Europe in 2013 (art. 27 of UE Regulation 1025/2012. UNI represents the Italian legislative activity at ISO and CEN.

2.2.2 European Committee for Standardization - CEN

The European Committee for Standardization (CEN) is a public standards organization founded in 1961, which is officially recognized as a European standards body by the EU, EFTA and the UK. CEN support the interested parties by providing an efficient infrastructure towards the development, maintenance and distribution of coherent sets of standards and specifications. It consists of 34 National members that are collaborating for the development of European Standards referring to various sectors.

2.3 Standardization documents

2.3.1 CEN Workshop Agreement - CWA

A CEN Workshop Agreement (CWA) by definition, is not an official standard, however, is a reference document, including consensus-based specifications, drawn up in an open Workshop environment and published by CEN.

2.3.2 Best Available Techniques (BAT) Reference documents - BREF

Best Available Technique (BAT) Reference Documents (BREFs) consist of a series of documents published as a result of exchange of information between a variety of stakeholders, including industry, regulators, etc. Practically, they cover the industrial activities listed in Annex 1 to the EU's IPPC Directive ². BAT conclusions include the final evaluations of Best Available Techniques and are part of every BREF.

2.4 ASFIMET Relations with UNI and CEN

UNI is the Italian body for standardization and Asfimet is member since 1999. From the beginning of the collaboration with UNI, the Association had an important role in several technical commissions as an active partner in the process of the drafting of new standard, the evaluation of standard proposed by UNI itself and to

²<https://www.eea.europa.eu/themes/air/links/guidance-and-tools/eu-best-available-technology-reference>

collect comments from the industry during public enquiry for the adoption of national standards.

Today, ASFIMET belongs to the Working Group (WG) UNI/TC 042/SC 01/WG 11 “Safety of surface treatment lines and equipment”, part of the technical commission UNI/TC 042 “Safety”.

At a European level, ASFIMET is representing UNI in the European CEN WG6/TC271 “Electroplating equipment – safety”.

2.5 Related Standardization Activities

Asfimet played an active a strategic role in the drafting of the **European Standard EN 17059:2018 “Plating and anodizing lines - Safety requirements”**, in force from 2018. This standard describes all significant hazards, hazardous situations and events relating to plating and anodizing lines, when used as intended and in compliance with the foreseeable conditions of the manufacturer. Procedures for testing and measuring safety requirements, marking of equipment and minimum operation requirements are also specified. It applies to the design and construction of plating lines and anodizing lines including their transporter systems for surface treatment of industrial products by means of inorganic or organic electrolytes or by means of other process chemistries.

Due to the fact that the PureNano technologies can be implemented in the new and already existing plating lines, the application of this standard during the project development has been suggested.

Moreover, on September 23, 2019 a review meeting of the UNI/TC 042 took place at the UNI Office in Milano. The scope was to update the WGs about all the recent activities of the different committees.

The meeting offered to Asfimet the opportunity to inform the participants about the starting of the PureNano project, with the aim to involve all the potentially interested TCs, in particular the ones which deal with nanotechnology.

3. PureNano contribution to new standards

3.1 CEN Workshop Agreement (CWA)

Asfimet, on behalf of UNI, has prepared a proposal form to propose to CEN the drafting of a CEN Workshop Agreement (CWA) for Integration of the PureNano technology into the standardisation process.

By definition, *“A CWA is an agreement developed and approved in a CEN Workshop (a working platform open to the participation of any interested parties).”* Its development is fast and flexible, on average between 10-12 months and, even if it is not a full standard neither involves any obligation, it is considered as a very important guideline for the industry. CWA will be suitable for sharing innovative knowledge and quickly transferring the results of the PureNano project to the market.

It is worth to note that the finalization of this procedure will be performed within the next months, since currently, the Technical Committees (TCs) are involved in the revision of the Machinery Directive. For this reason, all the other activities related to the drafting of new documents are temporarily suspended. However, Asfimet will periodically contact UNI to be updated on the timing of this review process with the aim to resume the standardization activities.

3.2 STM BREF - SURFACE TREATMENT OF METALS AND PLASTICS

Within the standardisation activity, it is important to focus the attention on another important document concerning the plants and equipment used in the surface finishing industry, the “STM BREF - SURFACE TREATMENT OF METALS AND PLASTICS”.

Drafted in the framework of the Integrated Pollution Prevention and Control (IPPC) Directive (96/61/EC) and the Industrial Emissions Directive (2010/75/EU), this BAT (Best Available Techniques) Reference document (BREF) includes installations for the surface treatment of metals and plastics using an electrolytic or chemical

process. It is in force from 2006 and Asfimet, together with a number of European partners, contributed to its drafting.

The importance of the wastewater treatment and the recovery of the raw materials is highlighted in every part of this STM-BREF. PureNano technology will be proposed and considered as a BAT in the next BREF.

The STM BREF is currently under revision; the Technical Working Group (TWG) ended the KoM and the preliminary meetings on 7 June 2022. The updated document is supposed to be published in 2026. The STM BREF and the report of the KoM of the revision process is available online ³

³ <https://eippcb.jrc.ec.europa.eu/reference/surface-treatment-metals-and-plastics>

4. Conclusions

Deliverable 7.6 presents the standardization activities of PureNano project. The task relative to standardization matters are mainly under WP7, Task 7.4. and in total the corresponding Deliverables (7.1, 7.6, 7.8, 7.9), including the current one, provide the standardization landscape and applicable standards that are relative to PureNano materials and technologies, along with the contribution of project results to the standards. This document divided in two parts, the first one gives an overall description of the standardization bodies published standards and work under development in the relative field of interest, and the second one, provides information on PureNano contribution activities to the standards.

PureNano contribution to the new standards developments, as thoroughly presented hereafter, in specific topics, promoted the inclusion of the outcomes of the project in new or future standards that can be easily used by the European or international industry, increasing this way the impact of the project.