A proposal for a new work item within the scope of an existing committee shall be submitted to the secretariat of that committee with a copy to the Central Secretariat and, in the case of a subcommittee, a copy to the secretariat of the parent technical committee. Proposals not within the scope of an existing committee shall be submitted to the secretariat of the ISO Technical Management Board.

The proposer of a new work item may be a member body of ISO, the secretariat itself, another technical committee or subcommittee, an organization in liaison, the Technical Management Board or one of the advisory groups, or the Secretary-General.

The proposal will be circulated to the P-members of the technical committee or subcommittee for voting, and to the O-members for information.

**IMPORTANT NOTE:** Proposals without adequate justification risk rejection or referral to originator.


- The proposer has considered the guidance given in the [Annex C](https://www.iso.org/standard/40841.html) during the preparation of the NWIP.

**Proposal** (to be completed by the proposer)

- **Title of the proposed deliverable.**
- **English title:**
  - Community scale resource oriented sanitation treatment systems
- **French title (if available):**
  - Click here to enter text.

*(In the case of an amendment, revision or a new part of an existing document, show the reference number and current title)*
Scope of the proposed deliverable.

The international standard will define requirements and test methods to ensure safety, performance, and sustainability of community-scale resource-oriented fecal sludge treatment units that serve approximately 1,000 to 100,000 people. The standard will apply to treatment units that (a) primarily treat human excreta, (b) are able to operate in non-sewered and off-grid environments, and (c) are prefabricated. The standard will not apply to sanitation treatment units requiring sewer infrastructure or electric grid access. Additionally, treatment units to which the standard will apply exhibit resource recovery capability (e.g., energy, drinking water, fertilizer) and are capable of being energy independent or energy net positive.

The standard is intended to ensure the general performance, safety, and sustainability of such units. The standard will exclude installation, selection, and maintenance and operation of such units.
Purpose and justification of the proposal

According to the World Health Organization (WHO), an estimated 2.3 billion people have no access to safe, clean toilets and 1 billion are forced to defecate in the open. The devastating consequences of these practices include an estimated 1 million preventable deaths per year, primarily from dysentery-like diarrheal diseases.

Where there is provision of sanitation facilities, often the fecal sludge is unsafely disposed – sludge directly to the environment; the bulk of this untreated fecal sludge is from on-site systems that are not being emptied and left to overflow or if emptied improperly disposed due to economics of transporting to distant centralized treatment facilities, nor recovery of beneficial treatment product. Essentially, current fecal sludge management approaches are often failing with direct impact on human health and safety due to environmental degradation as a result of unsafe disposal. The development of a standard leading to certified effective, efficient community scaled resource oriented sanitation treatment systems would be a material change to the service chain by having smaller, more localized treatment systems making it easier (logistically and economically) to serve poor communities.

While PC 305 aims to reinvent the toilet and promote an international performance standard on a consumer level household scale, another critical step will be to reinvent fecal sludge treatment through the deployment of a stand-alone, industrial scale, community scaled resource oriented sanitation treatment system. In order to realize the full impact of these technologies and deploy them safely at a large scale, relevant safety and performance guidelines are needed for the commercial systems as well.

Some national standards and other guidelines have been developed that apply to certain aspects of the community scaled resource oriented sanitation treatment system, or to separate but related technology. However, no international standard has been found to contain the commonly accepted criteria by which to measure the performance of the community scaled resource oriented sanitation treatment systems in total. Such an international standard would enhance efforts to widely manufacture, market and deploy the technology where it is needed most.

There are three ISO committees that currently involved in similar areas of standards development: ISO TC 224, Service activities relating to drinking water systems and wastewater systems, ISO TC 275, Sludge recovery, recycling, treatment and disposal and ISO TC 282, Water reuse. This proposed work is out of scope for these committees at this time.

The scope of ISO TC 224 focuses on management systems and service quality while this project will focus on the qualification of the design of the system and the performance treatment and processing technologies. The goal of the project is to define the technical parameters, target values and thresholds for this technology.

ISO TC 282 deals with water reuse, and water suitable for reuse is one beneficial product created by this technology. However, the work of TC 282 does not address treatment technology or the other beneficial products – biosolids, biogas or integrated conversion of product to electricity – created by the technology of this proposed project.

The work of TC 275 is complementary to the work of this project. TC 275 focuses on sludge characterization to facilitate informed decisions on the selection of treatment technologies and disposal. This project focuses on new and novel approaches for resource recovery oriented fecal sludge treatment and will have a strong focus on design, safety and performance qualification of resource recovery oriented treatment technologies.
Based on these considerations, and the fact that no ISO Committee currently exists to address the technology, ANSI and the Bill & Melinda Gates Foundation took the first step by proposing an International Workshop Agreement (IWA), currently in progress. Once developed, it is ANSI’s intent that the IWA may serve as the basis for a new international standard developed by the proposed ISO project committee. Currently, partners and grantees of the Foundation consist of stakeholders from around the globe, including developing countries, participate in the 3-workshop IWA and ANSI intends to make a specific effort to continue to encourage participation from developing countries in the ISO activity.

Consider the following: Is there a verified market need for the proposal? What problem does this standard solve? What value will the document bring to end-users? See Annex C of the ISO/IEC Directives part 1 for more information.

See the following guidance on justification statements on ISO Connect: https://connect.iso.org/pages/viewpage.action?pageId=27590861

Preparatory work (at a minimum an outline should be included with the proposal)

☐ A draft is attached  ☒ An outline is attached  ☐ An existing document to serve as initial basis

The proposer or the proposer's organization is prepared to undertake the preparatory work required:

☒ Yes ☐ No

If a draft is attached to this proposal:

Please select from one of the following options (note that if no option is selected, the default will be the first option):

☐ Draft document will be registered as new project in the committee's work programme (stage 20.00)
☒ Draft document can be registered as a Working Draft (WD – stage 20.20)
☐ Draft document can be registered as a Committee Draft (CD – stage 30.00)
☐ Draft document can be registered as a Draft International Standard (DIS – stage 40.00)

Is this a Management Systems Standard (MSS)?

☐ Yes ☒ No

NOTE: if Yes, the NWIP along with the Justification study (see Annex SL of the Consolidated ISO Supplement) must be sent to the MSS Task Force secretariat (tmb@iso.org) for approval before the NWIP ballot can be launched.

Indication(s) of the preferred type or types of deliverable(s) to be produced under the proposal.

☒ International Standard  ☐ Technical Specification
☐ Publicly Available Specification  ☐ Technical Report

Proposed development track

☒ 1 (24 months)  ☐ 2 (36 months - default)  ☐ 3 (48 months)

Note: Good project management is essential to meeting deadlines. A committee may be granted only one extension of up to 9 months for the total project duration (to be approved by the ISO/TMB).

---

Known patented items (see ISO/IEC Directives, Part 1 for important guidance)
☒ Yes ☐ No
If "Yes", provide full information as annex

Co-ordination of work: To the best of your knowledge, has this or a similar proposal been submitted to another standards development organization?
☐ Yes ☒ No
If “Yes”, please specify which one(s):
Click here to enter text.

A statement from the proposer as to how the proposed work may relate to or impact on existing work, especially existing ISO and IEC deliverables. The proposer should explain how the work differs from apparently similar work, or explain how duplication and conflict will be minimized.
The proposed standard will build on the ISO IWA on the same subject, to be published in 2018.

A listing of relevant existing documents at the international, regional and national levels.

- DIN EN 12566-3: Small wastewater treatment systems for up to 50PT – part 3: Packaged and/or site assembled domestic wastewater treatment plants
- EN 12255 - Wastewater treatment plants for more than 50 PT (16 parts).
- NSF/ANSI 41: Non-liquid saturated treatment systems
- NSF/ANSI 350, Onsite Residential and Commercial Water Reuse Treatment Systems
- NSF/ANSI 40: Residential wastewater treatment systems
- ISO 24511: activities related to drinking water and wastewater services – Guidelines for the management of wastewater utilities and for the assessment of wastewater services
- ISO/DIS 24521: Activities relating to drinking water and wastewater services -- Guidelines for the management of basic onsite domestic wastewater services
- ISO/CD 30500: Sustained non-sewered sanitation systems
- ISO Guide 65: Guide for the inclusion of environmental aspects in product standards
- ISO Guide 82: Guidelines for addressing sustainability in standards
- ISO Guide 51: Safety aspects – Guidelines for their inclusion in standards
- ISO Directives, Part 2: Rules for the structure and drafting of International Standards
- WHO Guidelines for the safe use of wastewater, excreta and grey water
- EPA Method for microbiological analysis of sewage sludges, 1993
- APHA Methods for the Examination of Water and Wastewater
- EPA Guidelines for water reuse (2012)
Please fill out the relevant parts of the table below to identify relevant affected stakeholder categories and how they will each benefit from or be impacted by the proposed deliverable(s).

<table>
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<tr>
<th>Industry and commerce – large industry</th>
<th>Benefits/impacts</th>
<th>Examples of organizations/companies to be contacted</th>
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<td>Provide a transparent and common basis for competition that guides innovation and is a way to attest product quality</td>
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<td>Improved public sanitation</td>
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<td>Delft University of Technology, North Carolina State University Duke University</td>
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<tr>
<td>Certification opportunity to improve business case for all technology/product suppliers</td>
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<th>Non-governmental organizations</th>
<th>Benefits/impacts</th>
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<td>Public health and clean water NGOs, World Bank</td>
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</table>

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<tr>
<th>Other (please specify)</th>
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<td>Click here to enter text.</td>
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**Liaisons:**
A listing of relevant external international organizations or internal parties (other ISO and/or IEC committees) to be engaged as liaisons in the development of the deliverable(s).

ISO TC 224, Service activities related to drinking water systems and wastewater systems
ISO TC 275, Sludge recovery, recycling, treatment and disposal
ISO TC 282, Water reuse
ISO PC 305, Sustainable non-sewered sanitation systems

**Joint/parallel work:**
Possible joint/parallel work with:
- ☐ IEC (please specify committee ID)
  Click here to enter text.
- ☐ CEN (please specify committee ID)
  Click here to enter text.
- ☐ Other (please specify)
  Click here to enter text.
A listing of relevant countries which are not already P-members of the committee.  
India, Senegal, South Africa, Uganda: all countries that require community scale resource oriented sanitation treatment systems.

Note: The committee secretary shall distribute this NWIP to the countries listed above to see if they wish to participate in this work.

<table>
<thead>
<tr>
<th>Proposed Project Leader (name and e-mail address)</th>
<th>Name of the Proposer (include contact information)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click here to enter text.</td>
<td>Steven Cornish, ANSI <a href="mailto:Scornish@ansi.org">Scornish@ansi.org</a></td>
</tr>
</tbody>
</table>

This proposal will be developed by:
- ☒ A new Working Group (title: Click here to enter text.)
(Note: establishment of a new WG must be approved by committee resolution)
- ☐ The TC/SC directly
- ☐ To be determined

Supplementary information relating to the proposal
- ☒ This proposal relates to a new ISO document;
- ☐ This proposal relates to the adoption as an active project of an item currently registered as a Preliminary Work Item;
- ☐ This proposal relates to the re-establishment of a cancelled project as an active project.
Other:
Click here to enter text.

- ☒ Annex(es) are included with this proposal (give details)
Annex 1 provides information on relevant patents. Annex 2 provides a draft outline for the proposed ISO standard.

Additional information/questions
Click here to enter text.
<table>
<thead>
<tr>
<th>Inventor(s)</th>
<th>Institution - Assignee (if applicable)</th>
<th>Patent (Application) Number</th>
<th>Patent (Application) Title</th>
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<td>Peter Janicki</td>
<td>Bill &amp; Melinda Gates Foundation</td>
<td>US20160138433 &amp; WO2016077241</td>
<td>Multi-functional fecal waste and garbage processor and associated methods</td>
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Annex 2
ANSI NWIP on Community scale resource oriented sanitation treatment system

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  3.7 Test sequence and procedures ..................................................... Error! Bookmark not defined.
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  4.2 Hazard and operability study and risk assessment ..................... Error! Bookmark not defined.
  4.3 Ambient operation conditions ..................................................... Error! Bookmark not defined.
  4.4 Expected technical lifetime ......................................................... Error! Bookmark not defined.
  4.5 Treatment unit input ..................................................................... Error! Bookmark not defined.
5 Energy balance and resource recovery ......................................... Error! Bookmark not defined.
  5.1 General ...................................................................................... Error! Bookmark not defined.
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  5.3 Resource recovery ....................................................................... Error! Bookmark not defined.
6 Performance requirements ......................................................... Error! Bookmark not defined.
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7 Safety and functional requirements ............................................. Error! Bookmark not defined.
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  7.2 Process redundancy ................................................................. Error! Bookmark not defined.
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  8.2 Lighting ...................................................................................... Error! Bookmark not defined.
  8.3 System ergonomic design .......................................................... Error! Bookmark not defined.
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  9.3 Requirements for adjustment and maintenance activities ........ Error! Bookmark not defined.
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Annex 2
ANSI NWIP on Community scale resource oriented sanitation treatment system

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12.1 General
12.2 Performance claims
12.3 Unit boundaries
12.4 Energy independence assessment
12.5 Maintenance & operator documentation

Annex A (Informative) – Input specification templates
Annex B (Informative) - Typical Fecal Sludge Characteristics
Annex C (Informative) – Additional input specifications
Annex D (Normative) – Test methods and additional testing requirements
Annex E (Normative) – Risk-based approach
Bibliography