Appendix A – FEM Foundations

FEM Foundations (previously known as "Facility Preview") was introduced starting in Higg FEM 2020. From Higg FEM 2021 onwards, FEM Foundations, a subset of the full Higg FEM set of questions, is available for both self-assessment and verified-assessment on platform. FEM Foundations complements Higg FEM, enabling companies to quickly identify opportunities and hotspots in their extended value chain, as well as allowing new facility users to focus on FEM Foundations before moving to Higg FEM.

What is FEM Foundations?
FEM Foundations enables quick assessment of a facility's environmental sustainability readiness, and offers an introductory step towards Higg FEM, speeding up the initial environmental sustainability assessment process. FEM Foundations only consists of a subset of Level One questions in the Higg Facility Environmental Module (Higg FEM). By using FEM Foundations, facilities new to the Higg FEM can gradually become acquainted with the Higg FEM as they prepare for the comprehensive Higg FEM assessment.

FEM Foundations does not provide a comprehensive view of value chain performance, it is an entry point, and it does not replace the Higg FEM assessment. It is highly encouraged for facilities to review all the questions within the module before getting started to understand the type of information and data the facilities will need to input into the module.

Please note that the FEM Foundations is **NOT SCORED**. This means that you do not get points. Please also note that the Higg Index benchmarking feature does not apply to FEM Foundations.

Note: *Not all facilities are eligible to complete FEM Foundations. This assessment only applies to new facility accounts, meaning those facilities that have not completed Higg FEM previously. Facilities that have completed a Higg FEM in previous cadence(s) or are currently completing the full Higg FEM in the reporting year will not be able to complete FEM Foundations.*

How Does FEM Foundations Work:
FEM Foundations works similarly to Higg FEM. A self-assessment of FEM Foundations must be completed and posted before verification can begin. Once a module is posted and shared, your shared account will be able to view your completed module.

A facility should complete and post either one FEM Foundations or one Higg FEM in the same FEM cadence year. Unlike Higg FEM, FEM Foundations does not have a reporting period, it is available all year round, and it measures performance from the **most recent 12-months**. For example, if the facility is completing FEM Foundations in May 2023, FEM Foundations measures performance from May 2022 to April 2023).

How Does Verification work on FEM Foundations:
Verification on the FEM Foundations has the same workflow and verification protocol as the Higg FEM. While the majority of the questions in FEM Foundations are identical to questions in Higg FEM, thus verification criteria will be the same for those questions. There are some exceptions. For those questions that are not identical, please refer to the verification guidance in this guide.

For general Verification protocol, please refer to
https://howtohigg.org/higg-fem-verification-program/#section2 .

How To Read This Guide:
This guide will provide a quick access to full guidance for completing FEM Foundations. All questions in FEM Foundations are also in Higg FEM. In many cases, this guide provides direct links to the current How to Higg FEM Guide, because many FEM Foundations questions and verification criteria are identical to the Higg FEM.

For FEM Foundations questions that are not identical, the guidance specific to FEM Foundations is provided in this Appendix.

The table below indicates the Higg FEM questions that are included in FEM Foundations. Questions that are highlighted in Yellow indicate questions that have been modified to reflect foundational practices in a facility (e.g. FEM inputs or data requirements).

Note: In some cases the full Higg FEM Guidance is still applicable to modified questions with minor exceptions. This is noted in the question specific guidance below.

Site Info & Permits	EMS	Energy	Water	Wastewater	Air Emissions	Waste	Chemicals
All Questions	Question 1	Question 1	Question 1	Question 1	Question 1	Question 1	Question 1
	Question 2	Question 2	Question 2	Question 3	Question 3	Question 2	Question 2
	Question 3	Question 5	Question 3	Question 4	Question 4	Question 3	Question 3
	Question 5	Question 6	Question 6	Question 5	Question 5	Question 5	Question 4
	Question 6	Question 8	Question 7	Question 6	Question 6	Question 6	Question 5
	Question 8			Question 7	Question 7	Question 7	Question 6
	Question 9			Question 9		Question 9	Question 7
	Question 10			Question 11		Question 10	Question 8
				Question 12		Question 11	Question 9
				Question 13		Question 12	Question 10
				Question 14		Question 13	Question 11
				Question 15		Question 14	Question 12
				Question 16			Question 14
				Question 17			Question 15
				Question 18			Question 16
							Question 17
							Question 18

Figure 1: Summary of FEM Foundations questions.

FEM Foundations Question Specific Guidance

Facility Site Info & Permits

The questions in Facility Site Info & Permits are the same across full Higg FEM and FEM Foundations. Please refer to current How to Higg FEM Guide for full guidance.
Reference: How to Higg FEM Guide – Facility Site Info & Permits section

EMS

1. Are one or more employees at your facility responsible for coordinating your facility's environmental management activities?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

2. Has your facility identified the significant environmental impacts associated with current operations within the factory premises?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

3. Does your facility have a company environmental policy?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

5. Does your facility have a program or system in place to review and monitor environmental permit status and renewal (where appropriate) and ensure compliance?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

6. Does your facility maintain a documented system to identify, monitor and periodically verify all laws, regulations, standards, codes and other legislative and regulatory requirements for your significant environmental impacts(in addition to areas that are covered in required permits)?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

8. Does your facility have documented procedures that enable workers to report environmental emergencies/violations?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

9. Does your facility have a process and schedule to maintain all equipment?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

10. Can you please confirm there is no soil and/or groundwater contamination in your facility?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – EMS section

Energy

1. Select all sources of energy for your facility (exclude sources used for company owned and controlled vehicles):

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Purchased Energy

- Purchased Electricity
- Purchased Steam
- Purchased Chilled Water

Renewable Energy

- Biodiesel
- Biogas
- Mini or Micro-Hydro (onsite)
- Purchased Renewables
- Solar Photovoltaic (electricity) (onsite)
- Solar Thermal (onsite)
- Wind (onsite)

Non-Renewable Energy

- CNG - Compressed Natural Gas
- Coal - commercial mix
- Coal Water Slurry
- Diesel
- Fabric Waste (e.g. Scrap or unused fabric from the facility or an external source that is suitable for energy generation (e.g. incineration))
- Fuel Oil - Blended
- LNG - Liquid Natural Gas
- LPG - Liquid Petroleum Gas
- Natural Gas
- Petrol/Gasoline
- Propane

Biomass

- Biomass - Sustainably Sourced with certification.
- Biomass - Without sustainably sourced biomass certification.

After selecting your energy sources, you will be asked the following sub questions to provide additional details on your biomass, if applicable:

- **What is the source of biomass? Select all that apply.**
    - Under what certification system is this biomass certified under?
    - If Other or Country Specific Certification, please describe and give reference link to certification system.
    - Please upload certificates.

Suggested Uploads
- Energy tracking records that show all of the facility's energy sources.
- Supporting documentation that supports responses to the applicable sub questions (e.g. biomass certification details)

What is the intent of the question?
The intent of this question is to ensure facilities have identified and understand important characteristics of all energy sources used at the facility.

Technical Guidance:
Understanding all of your facility's energy sources is an important first step in energy management that will support identifying and tracking what energy is being used, where it is being used, and how much is being used.

In the FEM for this question, facilities are required to select all energy sources used within the site's physical boundary and operations under your business control (owned, operated, or directly leased).

How this will be Verified:

Documentation Required:
- List of all energy sources used at the facility and any supporting documentation that may include:
    - Energy purchasing and/or use records (e.g., invoices, metering records)
- Documentation that supports responses to the sub questions on energy source characteristics (e.g., certifications for biomass energy sources).

Interview Questions to Ask:
- Staff responsible for managing energy understand the facility's energy sources and any supporting energy source characteristics reported in the sub questions (e.g., GHG emission factors, sources of biomass and any associated certification, purchased steam temperature and pressure, etc.)

Inspection - Things to Physically Look For:
- Observations onsite are consistent with the facility's reported energy sources (i.e., the reported sources are observed to be in use at the facility)

2. Select all sources of energy/fuel for company owned and controlled vehicles. Select all that apply:

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Notes: For sources below that relate to charging or fuelling of vehicles onsite, you should select the energy source below only if this energy consumption is tracked separately and is NOT already included in the facility's overall energy reporting for the source(s) selected in the previous question so as to avoid double counting the use of this energy source in the Higg FEM. For example, if your facility has electric vehicles and charges them onsite using purchased electricity and the electricity consumption of these vehicles is not tracked separately (i.e., subtracted from overall facility electricity consumption), you **should not** select this source for this question. Similarly, if the facility has natural gas or propane fueled vehicles that are refueled onsite and this is not tracked separately from overall facility usage, you **should not** select these as sources for this question.

Purchased Energy

- Purchased Electricity

Renewable Energy

- Biodiesel
- Biogas
- Ethanol
- Hydrogen - Renewable Source (i.e., Produced from renewable energy (green hydrogen))
- Purchased Renewables (electricity)
- Solar Photovoltaic (electricity)
- Wind (electricity)

Non-Renewable Energy

- CNG - Compressed Natural Gas
- Diesel
- Hydrogen -Non- Renewable Source(i.e., Produced from non-renewable energy (grey hydrogen))
- LNG - Liquid Natural Gas
- LPG - Liquid Petroleum Gas
- Petrol/Gasoline
- Propane

Suggested Uploads

- Energy tracking records that show all of the facility's energy sources of energy/fuel for company owned and controlled vehicles.

What is the intent of the question?
The intent of this question is to ensure facilities have identified all energy sources of energy/fuel for company owned and controlled vehicles.

Technical Guidance:
Understanding all of your facility's energy sources is an important first step in energy management that will support identifying and tracking what energy is being used, where it is being used, and how much is being used.

In the FEM for this question, facilities are required to select all energy sources used for company owned and controlled vehicles. This should include company owned or controlled vehicles used for transporting including, but not limited to employees (workers and management staff), contractors, customers, raw materials, or product.

How This Will Be Verified:

Documentation Required:
- List of all energy sources of energy/fuel used for company owned and controlled vehicles and any supporting documentation that may include:
    - Energy purchasing and/or use records.

Interview Questions to Ask:
- Staff responsible for managing energy understand the facility's energy sources used for company owned and controlled vehicles.

Inspection - Things to Physically Look For:
- Observations onsite are consistent with the facility's reported energy sources for company owned and controlled vehicles (i.e., company vehicles that use the reported energy sources).

5. Does your facility track any of its energy use? (excluding energy used for company owned and controlled vehicles)

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Energy section

6 . Does your facility track energy use from each energy source your facility utilizes?

This question is the same across full Higg FEM and FEM Foundations (with the exception of energy consumption reporting tables) . Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Energy section

8. Does your facility track energy/fuel use from each energy/fuel source of company owned and controlled vehicles that your facility utilizes?

This question is the same across full Higg FEM and FEM Foundations (with the exception of energy consumption reporting tables) . Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Energy section

Water

Applicability

Please refer to the current How to Higg FEM Guide for full guidance on applicability of this section
Reference: How to Higg FEM Guide – Water section

1. Select all water sources used by your facility.

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Water section

2. Does your facility track any of its water use?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Water section

3. Does your facility track the consumption of water from all of the sources it utilizes?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Water section

6. Is there any Legally Mandated Groundwater Abstraction Restrictions in your country?

This question is the same across full Higg FEM and FEM Foundations (with the exception of the groundwater quantity reporting questions). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Water section

7. Does your facility have a process to monitor the water supply network in your facility for leaks?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Water section

Wastewater

Applicability

Please refer to the current How to Higg FEM Guide for full guidance on applicability of this section
Reference: How to Higg FEM Guide – Wastewater section

1. Does your facility track its wastewater volume? (Industrial/Domestic/Combined)

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Note: In the Higg FEM, wastewater is categorized as follows:

- **Domestic Wastewater:** Wastewater originating from domestic/sanitary usage such as toilets, bathing, personal laundry and kitchens**.**

- **Industrial Wastewater:** Water that has been used for manufacturing processes and no longer meets the quality standard for beneficial use (e.g., wastewater from production, lubrication, cooling, maintenance, cleaning of production machines, etc.).

Answer Yes If: Your facility tracked the volume of wastewater discharged from **all** sources (e.g., domestic, industrial and/or combined) in the FEM reporting year.

Answer Partial Yes If: Your facility tracked the volume of wastewater discharged from **one (1) or more, but not all** sources (e.g., domestic, industrial and/or combined) in the FEM reporting year.

Suggested Uploads:

- Documentation that demonstrates the facility tracked the volume of wastewater discharged from applicable sources. (e.g., tracking records for wastewater discharge, metering records/logs, wastewater treatment invoices, etc.)

Note: Uploading of all metering records/logs or bills is not required, however they should be available for review at the time of verification.

What is the intent of the question?

The intent of this question is for facilities to demonstrate that they are tracking the volume of wastewater discharged from the facility.

Technical Guidance:

Wastewater tracking allows visibility into daily operations and which operations impact wastewater volume. Knowing your wastewater volume is also linked to potential environmental impact and operational costs.

Wastewater tracking should include all wastewater generated from all manufacturing and/or commercial activities at the facility (domestic and industrial). Tracking should also include wastewater that is reused/recycled at the facility.

When establishing your water tracking and reporting program, start by doing the following:

- Mapping out facility areas and processes to identify where wastewater is generated and discharged.
- Establish procedures to collect and track wastewater data:
    - Install on-site meters or use metered invoices from off-site treatment facilities.
    - If estimation techniques are used to determine the amount of wastewater generated, the calculation methodology should be clearly defined and be supported by verifiable data.
- Record tracking data (e.g., daily, weekly, monthly records) in a format that is easy to review (e.g., Microsoft Excel or similar data analytics program that allows export of data in a human readable format) and maintain relevant supporting evidence for review during verification.

Additional guidance on measuring and estimating wastewater volume can be found in the How to Higg FEM Guide – Wastewater section

How This Will Be Verified:

When verifying a facility's wastewater data tracking, Verifiers **must** review all aspects of the facility's wastewater tracking program that could produce inaccuracies including:

- The initial data collection processes and data sources (e.g., invoices, on-site meters, metering logs, etc.); and
- The process and tools used to aggregate the data (e.g., spreadsheet calculations, unit conversions, etc.)

If any inconsistencies or errors are noted, the reported information must be corrected where possible and detailed comments should be included in the Verification Data field.

Documentation Required:

- Documentation that demonstrates the facility tracked the volume of wastewater discharged from applicable sources. This may include:
    - Wastewater discharge records (e.g., monthly bills and annual discharge records, metering records/logs, etc.)
        - **Note:** Annual discharge records compiled in a spreadsheet (e.g., Excel) are ok as long as detailed discharge tracking data is available for review.
- Meter calibration records where applicable (e.g., as per manufacturer's specifications).
- Estimation methodology documented where applicable.

Interview Questions to Ask:

- Staff responsible for managing wastewater can explain the facility's wastewater tracking program (e.g., how wastewater sources are identified, and discharge quantities are tracked).
- Key staff should understand:
    - The procedures in place for tracking wastewater quantity.
    - How data quality of the wastewater tracking program is maintained.
    - Any estimation methodologies used to calculate annual wastewater discharge volume.

Inspection - Things to Physically Look For:

- All wastewater sources observed are properly identified and tracked.
- Appropriate equipment for wastewater measurement is present (e.g., meters) if applicable.

3. Does your facility have a mechanism to prevent stormwater from being contaminated before it is discharged into the environment?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

4. Does your facility maintain a copy of the current contract, permit, agreement or invoices regarding wastewater discharge regulatory compliance requirements for your facility to the offsite wastewater treatment plant?

Note: This question is applicable only for facilities that utilize an offsite wastewater treatment plant.

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

5. Does your facility have a mechanism or process to monitor whether your wastewater treatment plant is functioning as per the design parameters (Volume, Flow Rate, Input /Output Quality)?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Note: This question is applicable only for facilities that utilize an onsite wastewater treatment plant.

Answer Yes If: If your facility has established procedures to ensure your water treatment plant is operating as per the design parameters and the documented procedures or processes must cover **all** of the following aspects:

- Standard Operating Procedures
- Training
- Communication
- Continuous monitoring
- Continuous Sampling & Testing
- Ongoing Maintenance

Answer Partial Yes If: If your facility has established procedures to ensure your water treatment plant is operating as per the design parameters and your documented procedures or processes, at minimum, cover the following aspects:

- Standard Operating Procedures
- Continuous monitoring
- Ongoing Maintenance

Suggested Uploads:

- Documentation that demonstrates the facility's wastewater treatment plant is being operated as per the design parameters (e.g., treatment plant design specifications, drawings, or manufacturers operating specifications, wastewater treatment plant operating procedures, records of process monitoring, testing).

What is the intent of the question?

The intent of this question is for facilities to demonstrate that the wastewater treatment plant is being operated and maintained as per the design specification/parameters.

Technical Guidance:

Wastewater treatment systems are highly engineered systems that are specifically designed based on the wastewater characteristics they are intended to treat (e.g., the types and concentrations of pollutants, volume of wastewater, level of treatment required, etc). It is crucial that the wastewater treatment system is operated within its design specifications and operating parameters to ensure the effective treatment of wastewater.

Facilities should have established procedures to ensure that the system is operated, monitored, and maintained in accordance with the design specifications and manufacturer's specifications for all system equipment and components (e.g., pumps and valves, flowmeters, motoring/sampling equipment, etc.)

It is also important that staff who operate and maintain the treatment system are appropriately trained to understand the operating/monitoring requirements, limitations, and troubleshooting of the system to ensure its continuous and effective operation.

Resources:

- ZDHC Wastewater Treatment System Operator Minimum Qualifications Guidelines https://www.roadmaptozero.com/output#Qualification
- ZDHC Wastewater Treatment Technologies https://www.roadmaptozero.com/output#Wastewater-Treatment-Technologies

How This Will Be Verified:

Documentation Required:

- Documentation that demonstrates the facility's wastewater treatment plant is being operated and maintained per the design parameters. This may include:
    - Treatment plant design specifications, drawings, or manufacturers operating specifications
    - The facility's wastewater treatment plant operating procedures
    - Process monitoring/testing records to ensure plant is operating within the designed operating parameters (e.g., flow rates, temperature, pH, suspended solids and/or heavy metals concentrations, etc)
    - Training records for operators.
    - Maintenance records that show equipment and components are maintained and calibrated per the design and manufacturer's specifications.

Interview Questions to Ask:

- Staff responsible for wastewater management can explain the facility's procedures for ensuring the wastewater treatment system is operated and maintained as per the design specifications and operating parameters.
- Operators and staff responsible treatment system maintenance understand the facility's procedures as well as the design/operating parameters and troubleshooting/maintenance procedures.

Inspection - Things to Physically Look For:

- Observations indicate that the treatment system is being operated and maintained in accordance with the facility's procedures and the systems design parameters (e.g., equipment is observed to be in good working order, proper process monitoring/testing activities are being conducted, etc.)

6. Does your facility have a back-up plan if there is an emergency related to wastewater?

This question is the same across full Higg FEM and FEM Foundations (excluding the sub question on evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

7. Can you please confirm that, wastewater generated by the facility is not discharged to the environment through leaking and/or bypassing??

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

9. Does your facility track its industrial wastewater sludge generated in the reporting year?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Note: This question is applicable only for facilities that generate industrial wastewater that is treated on-site.

Answer Yes if: Your facility tracked the annual quantity of industrial wastewater sludge generated at the facility in the FEM reporting year.

Suggested Uploads

- Sludge quantity/disposal tracking records that show the quantity of sludge generated of in the reporting year (e.g., waste manifests, internal tracking records)

What is the intent of the question?
The intent of this question is for facilities to demonstrate the annual quantity of industrial wastewater sludge was tracked in the reporting year.

Technical Guidance:
Tracking the quantity of sludge provides important information that can be used to identify opportunities to reduce sludge and quantify these reductions.

Procedures to track the annual quantity of sludge generated generally align with the practices used to track the quantity any waste stream and include the following:

- Determine what types of waste are generated.
- Determine where (location and processes) where sludge is being generated.
- Establish procedures to collect and track waste data:
    - Examples include on-site scales, waste invoices/manifests.
    - If estimation techniques are used to calculate the quantity of sludge, the methodology should be clearly defined and be supported by verifiable data.
- Record the data (e.g., daily, weekly, monthly sludge quantities) in a format that is easy to use and review such as Microsoft Excel or another data analytics program.

Additional guidance on measuring and estimating sludge volume can be found in the How to Higg FEM Guide – Wastewater section

How This Will Be Verified:

Documentation Required:

- Documentation that supports the reported sludge quantity. This may include:
    - Tracking records for annual sludge quantities (e.g., invoices from waste contractors, weighing records, etc.).
    - Scale calibration records if applicable (e.g., as per manufacturer's specifications)
    - Documented estimation methodologies if applicable.

Interview Questions to Ask:

- Staff responsible for managing sludge and/or wastes can explain how sludge quantity is tracked.
- Key staff should understand:
    - How data quality of the sludge tracking program is maintained.
    - Any estimation methodologies used to calculate annual sludge quantity.

Inspection - Things to Physically Look For:

- Observations are consistent with the facility reported procedures to track and measure sludge quantity (e.g., appropriate equipment is available for sludge quantity measurement if applicable).

11. Does your facility have well-marked, designated wastewater sludge storage areas?

Note: This question is applicable only for facilities that utilize an onsite wastewater treatment plant.

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

12. Is industrial wastewater sludge disposed of properly?

Note: This question is applicable only for facilities that generate industrial wastewater that is treated on-site.

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

13. Does your facility maintain manifests or similar documentation of the handling, transportation, processing, and disposal of sludge, accounting for all industrial wastewater sludge generated at the facility?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

14. Does your facility provide training to all employees whose work involves wastewater sludge handling (such as maintenance and custodial staff)?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

15. Is domestic wastewater sludge disposed of properly?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

16. Does your facility manage the residue of the Septic System?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Note: This question is applicable only for facilities that treat wastewater using a septic system.

Answer Yes if: Your facility has procedures or processes to manage the residue (e.g., sludge) from your septic system in accordance with the design and operating specifications of the septic system.

If you answer Yes to this question, you will be asked the following sub question(s):

- How frequently does your facility unload your septic tank(s)?

Suggested Uploads:

- Documentation that shows how the facility manages residue (e.g., sludge) from the septic system (e.g., the septic system design drawings showing capacity, tracking records of volume of wastewater sent to the septic system, septic system cleaning schedule and records, records of sludge generation, collection and disposal manifests, records of the final treatment/disposal method being used by the waste vendor.)

What is the intent of the question?
The intent of this question is for facilities to demonstrate that wastes (e.g., sludge) from the septic system are being managed in accordance with the design and operating specifications of the septic system.

Technical Guidance:

Septic systems are engineered systems that are specifically designed based on the wastewater characteristics they are intended to treat (e.g., the volume of wastewater and pollutant loading). It is crucial septic systems are operated within their design specifications and operating parameters to ensure the effective treatment of wastewater.

Facilities should have established procedures to ensure that the system is operated, monitored, and maintained in accordance with the design specifications and manufacturer's specifications for all system equipment and components (e.g., pumps, flowmeters, motoring/sampling, frequency for cleaning out sludge, etc.)

At minimum, residue (e.g., sludge) from the system should be disposed of in accordance with all applicable legal requirements related to sludge and waste disposal. This includes the use of qualified waste disposal vendors who are licensed/permitted to treat the sludge based on its hazardous characteristics.

As part of a facilities waste management program, it is important for facilities to understand how wastes (including septic system sludge) are treated and/or disposed of after leaving the facility. Facilities should have processes in place to communicate with waste vendors and verify the final treatment disposal methods for septic system sludge.

If sludge is treated and/or disposed of onsite, this should be done with proper permission (e.g., approvals/permits) from government authorities when required.

Resources:

- ZDHC Sludge Reference Document. **Note:** This guidance is not applicable for domestic only sludge https://downloads.roadmaptozero.com/output/Sludge-Reference-Document

How This Will Be Verified:

Documentation Required:

- Documentation that shows how the facility manages residue (e.g., sludge) from the septic system and how the system is being operated in accordance with its design capacity and operating specifications. This may include:
    - The septic system design drawings showing capacity.
    - Tracking records of volume of wastewater sent to the septic system (e.g., showing that the system is not being overloaded)
    - Septic system cleaning schedule and records.
    - Records of sludge generation, collection.
    - Septic system waste manifests.

Interview Questions to Ask:

- Staff responsible for managing wastewater and/or the septic system can explain how the facility ensures that it is being operated in accordance with the design capacity, how the system is maintained (e.g., cleaning frequency).

Inspection - Things to Physically Look For:

- Observations indicate that the specific system is being operated and maintained properly (e.g., no standing water, damp spots or strong odours near the septic tank or drainfield)

17. Have you tested your wastewater against the legal requirements that apply to your facility?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

18. Are you reporting against any wastewater standard (additional to the legal requirement)?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Wastewater section

Air emissions

Applicability

Please refer to the current How to Higg FEM Guide for full guidance on applicability of this section
Reference: How to Higg FEM Guide – Air emissions section

1. Has your facility created an inventory of all point source air emission sources at your facility?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Air emissions section

3. Is your facility in compliance with all applicable legal requirements relating to air emissions including all permitting, reporting and testing requirements?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Air emissions section

4. Do you know what refrigerant(s) your facility uses?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Answer Yes if: Your facility knows which specific refrigerants are used at your facility.

Suggested Uploads

- An inventory or list of refrigerants used onsite.

What is the intent of the question?
The intent of this question is to ensure that facilities understand which refrigerants are used at their facilities.

Technical Guidance
Refrigerants such as CFCs and HCFCs commonly used in air conditioning, cooling and refrigeration equipment can contain ODS that are contributors to GHG emissions and climate change due to their relatively high global warming potentials (GWPs). Refrigerants are often emitted to the air through equipment leaks or during servicing or disposal of refrigerant containing equipment.

Knowing which refrigerants are used onsite will help facilities plan for phasing out the use of ozone depleting substances (ODS) at their facility in accordance with good environmental practices and current or future regulatory requirements. More information on phasing out Ozone Depleting Substances can be found here: https://www.epa.gov/ods-phaseout

How This Will Be Verified:

Documentation Required:

- An inventory or list of refrigerants used onsite with supporting evidence such as:
  - Equipment specifications or technical manuals that show which refrigerants the equipment contains.
  - Records of refrigerant purchases or equipment service or maintenance that shows which refrigerants are used in equipment onsite.

Interview Questions to Ask:

- Staff responsible for managing environmental matters or refrigerant containing equipment understand and can explain which refrigerants are used onsite and how refrigerant use is identified and managed at the facility.

Inspection - Things to Physically Look For:

- All refrigerant use has been properly identified and this is consistent with onsite observations.

5. Does your facility have preventative maintenance procedures in place to avoid refrigerant leakage from your equipment?

This question is the same across full Higg FEM and FEM Foundations (with the exception of the document upload sub questions). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Air emissions section

6. Does your facility track refrigerant usage?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Answer Yes if: Your facility tracks the quantity of all refrigerants used in all equipment onsite.

Answer Partial Yes if your facility tracks the usage of at least one (1) refrigerant but does not yet track all refrigerants used onsite.

If you answer Yes or Partial Yes, you will be asked the following sub questions:

- Did you add this refrigerant to existing equipment in the reporting year?
- Did you fix the leak associated with this refrigerant?

Suggested Uploads

- An inventory of refrigerants used onsite with the quantity of each refrigerant added to existing equipment for the reporting year.
- Documentation of the methodology used to track refrigerant use (e.g., leakage rate or consumption calculation methodology)
- Documented plans or actions taken to fix refrigerant leaks, if applicable.

What is the intent of the question?
The intent of this question is for facilities to track how much refrigerant(s) your facility emitted in the reporting year.

Technical Guidance
Refrigerants are often emitted through equipment leaks and servicing. Most modern equipment is designed to minimize leaks however over time, leaks do occur. Having to add refrigerants to existing equipment generally indicates the system has a leak.

Tracking refrigerant use is an important part of managing refrigerants use onsite. Tracking refrigerant use allows facilities to monitor how much refrigerant has been released to the environment as well as identify problematic or leaking equipment.

It is also important to have an action plan to fix the leaks and/or upgrade equipment to eliminate refrigerant leakage.

When establishing your tracking and reporting program, start by doing the following:

- Map out all facility equipment (production and operational equipment) to identify equipment that contain refrigerants.
    - This should include identifying the specific refrigerant type that is used in the equipment (e.g., R-22).
- Establish procedures to determine how much refrigerant is released (e.g., through leaks, disposal, etc) from each piece of equipment.
    - In general, the amount of refrigerant released is equal to the amount of refrigerant that is added to the equipment (see Calculating Leak Rate below)
    - Refrigerant purchase invoices, or service records may also be helpful in determining quantities released.
    - If estimation techniques are used, the calculation methodology should be clearly defined and be supported by verifiable data.
- Record tracking data (e.g., monthly, annual leakage or top-up records) in a format that is easy to review [e.g., spreadsheet or similar data analytics program that allows export of data in a human readable format (e.g., Microsoft Excel)] and maintain relevant supporting evidence for review during verification.

Additional information on calculating and tracking refrigerant use can be found in the How to Higg FEM Guide – Air emissions section

How This Will Be Verified:

When verifying a facility's refrigerant data tracking, Verifiers **must** review all aspects of the facility's tracking program that could produce inaccuracies including:

- The initial data collection processes and data sources (e.g., equipment maintenance records, servicing logs, refrigerant purchase invoices, etc.); and
- The process and tools used to aggregate the data (e.g., spreadsheet calculations, leakage rate calculations, etc.)

If any inconsistencies or errors are noted, the reported information must be corrected where possible and detailed comments should be included in the Verification Data field.

Documentation Required:

- All refrigerant containing equipment has a log of equipment servicing including refrigerant replacement that is kept up to date (e.g., monthly, annual leakage rates or top-up records)
- Records of the quantity of each refrigerant added to existing equipment for the reporting year.
- Documentation of the methodology used to track refrigerant use (e.g., leakage rate or other consumption calculations and methodology)
- Documented plans or actions taken to fix refrigerant leaks, if applicable.

Note: If the facilities equipment is maintained by third-party service providers, copies of relevant documentation (e.g., service records, maintenance logs, quantities of refrigerants added) should be made available for verification.

Interview Questions to Ask:

- Staff responsible for maintaining the refrigeration equipment and tracking usage should understand and be able to describe the process and frequency for tracking refrigerant and the methodology to determine refrigerant usage.

Inspection - Things to Physically Look For:

- Evidence the facility is tracking refrigerant use and this is consistent with onsite observations (e.g. service tags or record on equipment that match maintenance records)

7. Are you monitoring or reporting against any industry guidelines or tools for air emissions (additional to the legal requirement)?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference:How to Higg FEM Guide – Air emissions section

Waste

1. Which non-hazardous waste streams does your site produce? Select all that apply

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

2. Does your facility track any of its non-hazardous waste streams?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

3. Does your facility track each non-hazardous waste stream your facility generates?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference:How to Higg FEM Guide – Waste section

5. Which hazardous waste streams does your site produce? Select all that apply

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

6. Does your facility track any of its hazardous waste streams?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

7. Does your facility track each hazardous waste stream your facility generates?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

9. Does your facility both segregate waste (hazardous and non-hazardous) and store these waste separately?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

10. Does your facility have well-marked, designated hazardous waste storage areas and containers?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

11. Does your facility have well-marked, designated non-hazardous waste storage areas and containers?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

12. Does your facility forbid all irresponsible waste disposal actions including open burning, open dumping, burying waste and intentional release into soil and/or water?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

13. Does your facility provide awareness training to employees regarding segregation of waste?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

14. Does your facility provide training to all employees whose work involves hazardous waste handling (such as maintenance and custodial staff) within the facility?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Waste section

Chemical Management

Applicability

Please refer to the current How to Higg FEM Guide for full guidance on applicability of this section

Reference: How to Higg FEM Guide – Chemical Management section

1. Does your facility have a written Chemical Management System (CMS) policy?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

2. Have you assigned the responsibility of implementing and maintaining the Chemical Management System (CMS) to a team/staff member?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

3. Does your facility have a chemical purchasing policy?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

4. Does your facility keep a Chemical Inventory List (CIL) and the suppliers of each chemical product?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

5. Does your facility's Chemical Inventory List (CIL) include the following data? Select all that apply

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

6. Does your facility make Safety Data Sheets (SDS) available to employees for all chemicals used?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

7. Does your facility train all employees who use chemicals on chemical hazards, risk, proper handling, and what to do in case of emergency or spill?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

8. Does your facility have a chemical spill and emergency response plan that is practiced periodically?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

9. Does your facility have appropriate and operable protective and safety equipment, as recommended by the Global Harmonization System compliant (or equivalent) Safety Data Sheet, in all areas where chemicals are stored and used?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

10. Does your facility have chemical hazard signage and safe handling equipment in the areas of the facility where chemicals are used?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

11. Does your facility select and purchase chemicals based on their hazards and MRSL requirements?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Answer Yes if: Your facility has a documented process in place to select and purchase chemicals based on their hazards and MRSL requirements
and all chemicals meet the requirements of MRSL and the facility's purchasing policy;
and MRSL conformance is confirmed annually (e.g., through certificates/declarations of MRSL conformance, certificates of analysis, etc).

Answer Partial Yes if: Your facility has a documented process in place to select and purchase chemicals based on their hazards and MRSL requirements but have purchased chemical(s) that do not have sufficient documentary evidence to prove compliance to MRSL, **and** your facility has a clear plan for obtaining the documents from chemical suppliers within 6 months or changing to a chemical supplier who can meet the requirements in order to increase the % of compliant chemicals meeting MRSL.

Non-production chemicals and spot cleaners:

For chemicals not used in the manufacturing process (e.g., lubricants, cleaning chemicals, etc.) or spot cleaners, it might not be feasible to obtain third party certificates/declarations of MRSL compliance or certificates of analysis. For these types of chemicals, this documentation is not required, but facilities

must have an established process in place to review the chemical ingredients against the MRSL to check for conformance.

Notes:

- The ZDHC MRSL conformance levels (1, 2 and 3) from the ZDHC Gateway- Chemical Module should be used for the determination of the conformity with the ZDHC MRSL. For more information about the ZDHC MRSL conformance, refer to the ZDHC MRSL Conformance Guidance here: https://downloads.roadmaptozero.com/input/ZDHC-MRSL-Conformance-Guidance
- Tools to check your chemical inventory to the ZDHC MRSL are the InCheck Solutions https://www.roadmaptozero.com/process#Incheck-guidelines

Suggested Uploads:

- Documentation that demonstrates the facility selects and purchases chemicals based on their hazards and MRSL requirements such as:
    - MRSL(s) applicable to the facility (e.g., customer's MRSL, ZDHC MRSL, combined facility MRSL).
    - Chemical purchasing policy and procedure(s).
    - Positive lists used for chemical purchasing.
    - Third party MRSL conformance certification/test reports/declarations and/or certificate of analysis of chemical composition.
    - Chemical inventory showing MRSL compliance status of all chemicals.

What is the intent of the question?

The intent is to ensure facilities have an established process to evaluate chemical hazards and MRSL conformance during procurement and that only compliant chemicals are purchased for use at the facility.

Technical Guidance:

MRSL is a Manufacturing Restricted Substance List which can be defined as a list of chemicals that are banned from use in manufacturing. The goal of an MRSL is to ensure facilities are using the environmentally preferred chemicals that result in less harm to the environment and human health. Using an MRSL in chemicals procurement can also help ensure more consistent material compliance.

To ensure that chemicals are appropriately evaluated before purchase, facilities should:

- Establish their own chemical MRSL that covers all MRSL requirements from clients (e.g., brands) they work with or industry initiatives they are a part of or implement a strategy to use compliant chemicals from an active list that covers all MRSL (e.g., the bluesign system).
- Establish a process to communicate MRSL requirements to all chemical suppliers including the required evidence from suppliers to confirm compliance (e.g., positive lists, certificates/declarations of MRSL conformance, certificates of analysis, or other relevant documentation)

- Include MRSL compliance as a purchasing requirement for all chemicals.
    - This should include procedures to verify chemicals conform to MRSL requirements through documentation provided by chemical suppliers.
    - Where applicable, facilities should purchase chemicals that are certified to meet MRSL requirements such as bluesign approved chemistry, Ecopassport by OekoTex.
- Ensure all chemical procurement staff are aware of MRSL requirements and the facility's purchasing policy and procedure.
- For chemicals not used in the manufacturing process (e.g., lubricants, cleaning chemicals) ensure there is a process in place to, at minimum, review the list of ingredients and SDS if available against the facility's MRSL to confirm MRSL conformance.

It is critical that facilities discuss MRSL requirements with their chemical suppliers to determine which chemical products are MRSL compliant and the requirements for chemical suppliers to be able to demonstrate their products comply with the facility's MRSL requirements.

It is also important that facilities not only rely on simple declarations or assurances from suppliers alone, but ensure there is a validation processes in place to ensure compliance such as chemical composition test reports from ISO 17025 certified laboratories approved for conducting the required chemical testing or use of established positive lists that confirm compliance with applicable MRSL (e.g., ZDHC, bluesign, OEKO-TEX, etc.)

Guidance for Hardgoods facilities:

In the hardgoods sector MRSL (Manufacturing Restricted Substances List) requirements may not be available. However, there is a significant impact from the use of chemicals and therefore Restricted Lists should be used.

For hardgoods manufacturing, black, grey and white lists are often used. Black lists contain chemicals that are prohibited in manufacturing, grey lists contain chemicals that should be phased out from manufacturing and white lists contain chemicals that may be used. As a summary term we have chosen "Restricted Lists". Beyond the fact that different lists are used in the hardgoods sector, the question about selection and purchasing is also valid for hardgoods facilities.

It is expected that facilities may use either a sector-wide list, a brand-specific restricted list or create their own list.

All textile components in the hardgoods sector (for example, products such as rucksacks, tents, etc.) should apply the MRSL criteria as outlined in the Higg FEM.

All other components should be governed *at least* by a Restricted List regarding their use during manufacturing. The restrictions on the final product, as applied through an RSL, may especially be relevant for the metal processing and electronics industry, and yet again for other sectors are not relevant. With RSLs the management of residual chemicals on the final product is secured, however this may depend on the product and materials used.

Three examples of “Restricted Lists” are:

1. The RoHS directive of the EU, the European Union. The RoHS directive restricts residual chemicals on electronic products and is strongly linked to the EU WEEE directive mentioned in the waste section guidance. Electronic Products that may be relevant for the hardgoods section includes Consumer equipment, Lighting equipment (including light bulbs, Electronic and electrical tools, Toys, Leisure and Sports equipment, Monitoring and Control instruments). The chemicals that are restricted are:
    a. Lead (Pb)
    b. Mercury (Hg)
    c. Cadmium (Cd)
    d. Hexavalent chromium (Cr6+)
    e. Polybrominated biphenyls (PBB)
    f. Polybrominated diphenyl ether (PBDE)
    g. Bis(2-ethylhexyl) phthalate (DEHP)
    h. Butyl benzyl phthalate (BBP)
    i. Dibutyl phthalate (DBP)
    j. Diisobutyl phthalate (DIBP)
        i. Maximum Permitted Concentration: 0.1%[5]
        ii. Maximum for Cadmium: 0.01%[5]
2. The GADSL (Global Automotive Declarable Substance list).
3. The ABB List of Prohibited and Restricted Substances.

It is expected that facilities may use either a sector-wide list, a brand-specific restricted list or create their own list.

For the time being, it has been decided by the Hardgoods FEM working group, that the facilities that have not yet been exposed to the concept of MRSL or received an MRSL from one of their Brand/ Retail buyers, will not need to respond to the questions related to MRSL.

Please observe that this provision is an interim compromise in order to support hardgoods facilities that have not yet been exposed to the MRSL concept. However, we expect that these facilities as well strive for solutions related to MRSL.

Resources:

- ZDHC Gateway- Chemical Module https://www.my-aip.com/ZDHCGateway/Login.aspx
- ZDHC MRSL Conformance Guidance https://downloads.roadmaptozero.com/input/ZDHC-MRSL-Conformance-Guidance
- ZDHC InCheck Solutions https://www.roadmaptozero.com/process#Incheck-guidelines
- ZDHC ChemCheck https://www.zdhc-gateway.com/reports/chemcheck
- bluesign https://www.bluesign.com/en
- OEKO-TEX https://www.oeko-tex.com/en/

How This Will Be Verified:

Documentation Required:

- Documentation that demonstrates the facility selects and purchases chemicals based on their hazards and MRSL requirements. This may include:
    - MRSL(s) applicable to the facility (e.g., customer's MRSL, ZDHC MRSL, combined facility MRSL).
    - Chemical purchasing policy and procedure(s) that include, but are not limited to:
        - Process of communicating MRSL with the chemical suppliers,
        - Process to obtain suppliers' confirmation/declaration of MRSL compliance,
        - Collection of up-to-date positive lists from chemical suppliers.
        - Preference/requirements for purchasing chemicals on positive lists.
    - Positive lists used for chemical purchasing.
    - Annual third party MRSL conformance certification/test reports/declarations and/or certificate of analysis of chemical composition.
    - Chemical inventory showing MRSL compliance status of all chemicals.
- For chemicals not used in the manufacturing process documentation that the facility has a process in place to review chemical ingredients against the facility's MRSL. This may include:
    - SDS or TDS
    - Ingredient lists from consumer labels.

Interview Questions to Ask:

- Staff responsible for the facility's chemical management program can explain how the facility established its MRSL and MRSL requirements of the facility's chemical purchasing policy and procedure.
- Staff responsible for chemical procurement understand and can explain how chemicals are evaluated and approved for purchase in relation to the facility's MRSL and purchasing policy and procedure..

Inspection - Things to Physically Look For:

- Observations onsite indicate that all chemicals in use comply with the facility's MRSL and chemical purchasing policy and procedure (e.g., observed chemicals have been appropriately screened and there is documentary evidence to confirm MRSL conformance).

12. Does your facility select and purchase chemicals based on their hazards and RSL requirements?

This question has been modified to suit foundation practices in a facility. Hence it will not resemble the corresponding question in full Higg FEM. Please refer to the guidance below to meet verification requirements for this question.

Answer Yes if: Your facility has a documented process in place to select and purchase chemicals based on their hazards and RSL requirements **and all** chemicals meet the requirements of RSL and the facility's purchasing policy **and** there is documentation to support this.

Answer Partial Yes if: Your facility has a documented process in place to select and purchase chemicals based on their hazards and RSL requirements but have purchased chemical(s) that do not have sufficient documentary evidence to prove compliance with the facility's purchasing policy **and** your facility has clear plan for obtaining the supporting this documentation.

Suggested Uploads:

- Documentation that demonstrates the facility selects and purchases chemicals based on their hazards and RSL requirements such as:
    - RSL(s) applicable to the facility (e.g., customer's RSL, combined facility RSL).
    - Chemical purchasing policy and procedure(s).
    - Positive lists used for chemical purchasing.
    - Third party RSL conformance certification/test reports.
    - Chemical inventory showing compliance status of all chemicals with the facility's purchasing policy.

What is the intent of the question?

The intent is to ensure facilities have an established process to evaluate chemical hazards and RSL conformance risk during procurement and chemicals purchased are compliant with the facility's chemical purchasing policy.

Technical Guidance:

Restricted Substance List (RSL) is a list of chemicals that are regulated via limiting or restricting the allowable concentration of chemicals in final products due to their potential harmful impact on human health and the environment. RSLs are typically developed by industry associations, governments, or individual companies to ensure that products and materials used in manufacturing processes meet specific safety and environmental standards.

RSLs are one way to identify chemicals that are potentially hazardous which can be used to establish chemical purchasing practices to minimize the risk of hazardous chemicals entering a facility and products.

To ensure that chemicals are appropriately evaluated before purchase, facilities should:

- Establish their own chemical RSL that covers all RSL requirements from clients (e.g., brands) they work with or industry initiatives they are a part of

    - For facilities that have more than one customer RSL, a policy should be in place to use the most stringent RSL limits for each chemical and then establish their RSL to meet all customer requirements.
- Establish a process to communicate RSL requirements to all chemical suppliers including the evidence needed from suppliers to confirm compliance (e.g., positive lists, certificates/declarations of RSL conformance, certificates of analysis, or other relevant documentation)
- Include RSL compliance as a purchasing requirement for all chemicals.
    - This should include procedures to verify chemicals conform to RSL requirements through documentation provided by chemical suppliers.
- Ensure all chemical procurement staff are aware of RSL requirements and the facility's purchasing policy and procedure.
- For chemicals not used in the manufacturing process (e.g., lubricants, cleaning chemicals) ensure there is a process in place to, at minimum, review the list of ingredients and SDS if available against the facility's purchasing policy requirements.

Resources:

- bluesign system substance list which can be downloaded here: https://www.bluesign.com/en/downloads
- AFIRM RSL Toolkit https://afirm-group.com/toolkit/
- AFIRM Chemical Information Sheets https://afirm-group.com/english-information-sheets/

How This Will Be Verified:

Documentation Required:

- Documentation that demonstrates the facility selects and purchases chemicals based on their hazards and RSL requirements. This may include:
    - RSL(s) applicable to the facility (e.g., customer's RSL, combined facility RSL).
    - Chemical purchasing policy and procedure(s) that include, but are not limited to:
        - Process of communicating RSL with the chemical suppliers,
        - Process to obtain suppliers' confirmation/declaration of RSL compliance,
        - Collection of up-to-date positive lists from chemical suppliers.
        - Preference/requirements for purchasing chemicals on positive lists.
    - Positive lists used for chemical purchasing.
    - Annual third party RSL conformance certification/test reports/declarations.
    - Chemical inventory showing RSL compliance status of all chemicals.

Interview Questions to Ask:

- Staff responsible for the facility's chemical management program can explain how the facility established its RSL and RSL requirements of the facility's chemical purchasing policy and procedure.

- Staff responsible for chemical procurement understand and can explain how chemicals are evaluated and approved for purchase in relation to the facility's RSL and purchasing policy and procedure.

Inspection - Things to Physically Look For:

- Observations onsite indicate that all chemicals in use comply with the facility's RSL ,chemical purchasing policy and procedure.(e.g., observed chemicals have been appropriately screened and there is documentary evidence to confirm RSL conformance).

14. Does your facility have well marked, designated chemical storage areas?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

15. Does your facility have well marked sub-storage areas?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

16. Does your facility train employees responsible for the chemical management system on Restricted Substance Lists (RSLs)?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

17. Does your facility train employees responsible for the chemical management system on Manufacturing Restricted Substance Lists (MRSLs)?

This question is the same across full Higg FEM and FEM Foundations (with the exception of evaluating employee knowledge after training). Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section

18. Does your facility have an established process to investigate and resolve a potential RSL failure?

This question is the same across full Higg FEM and FEM Foundations. Please refer to the current How to Higg FEM Guide for full guidance.

Reference: How to Higg FEM Guide – Chemical Management section