VIRUNGA | FOUNDATION
UNITED KINGDOM

Manufacturing – Specifications Sterilizer

TECHNICAL SPECIFICATIONS

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Context

As an actor of agro-industrial development in DRC, The Virunga Foundation intends to build 3 small scale oil palm production units. In this framework, it is required to supply 3 Sterilizers, each of them to be integrated into each production unit.

The aim of this document is to specify minimum technical requirements of material for mechanical equipment, pipes, fittings and flanges, being part of the sterilizers to be manufactured

Environmental conditions

The site is located in the neighborhood of Mutwanga, East of RDC in the North Kivu region

Altitude: 1146 m
Tropical climate and weather conditions
Ambient temperature: 20…35 °C
Outdoor installation
Creen fields

Scope of supply (see shared drawing docs .xls) :

The supplier shall manufacture and supply 3 assembled units according to the following set of manufacturing drawings (see drawing list in appendix). All items shown on the drawings are part of the supplier's scope of supply.

Equipement	TAG	Drawing number	Rev	Title
Sterilisator	ST-20		2	25-1539 – Manufacturing - Specifications
Sterilisator	ST-20	25-1539-ST-002-050	1	Sterilisator Assembly
Sterilisator	ST-20	25-1539-ST-002-030	1	Pressure gauge assembly
Sterilisator	ST-20	25-1539-ST-002-001	1	Sterilisator
Sterilisator	ST-20	25-1539-ST-002-002	1	Front door
Sterilisator	ST-20	25-1539-ST-002-003	1	Corner door
Sterilisator	ST-20	25-1539-ST-002-004	1	Exit door
Sterilisator	ST-20	25-1539-ST-002-005	1	Crown entrance and exit
Sterilisator	ST-20	25-1539-ST-002-006	1	Door seal
Sterilisator	ST-20	25-1539-ST-002-007	1	Entrance and exit door handle
Sterilisator	ST-20	25-1539-ST-002-008	1	Door handle washer for entrance and exit
Sterilisator	ST-20	25-1539-ST-002-009	1	Front door handle
Sterilisator	ST-20	25-1539-ST-002-010	1	Exit door handle
Sterilisator	ST-20	25-1539-ST-002-011	1	Foot chassis sterilisator
Sterilisator	ST-20	25-1539-ST-002-013	1	Underfloor piping
Sterilisator	ST-20	25-1539-ST-002-017	1	Union fitting

Applicable norms and standards

No specific Standard and Norms (the equipment must adhere to strict safety and performance standards). Supplier will indicate in his offer the applicable standards and norms he will use for the design.

General technical specifications

Virunga's drawings and manufacturing standards follow the international norms, as listed hereunder,

without other specific instructions.

Drawings

 View : NF EN ISO 5456-2

 general dimensional tolerances : ISO 2768-m

 Adjustments (ISO 286-2):

Bore normal H7 + shaft g6 for loose adjustments
Bore normal H7 + shaft p6 for thight adjustments

 Surface:

Steel plates : as rolled

Machined parts : 1,6 ≤ Ra ≤ 6,3.

Assembly

 Bolting

Types
-screw : DIN 931, DIN 933 and DIN 912
-nut : DIN 934
-washer : DIN 125-1A
Material
- carbon steel assembly : 8.8 electro-galvanized
- stainless steel assembly : screw A2, nut and washer A4

 Welding

-Weld thickness 0,7 x Ep (Ep : smallest plate thickness)
-Structure, supports, profiles : seam welding
-Casing, hopper, flange, chute : continuous and tight
-Stainless steel welding : pickled and passivated

Painting specifications

a) Painting system

The coating system must be compliant with ISO-12944 part 5 class C3 High or equivalent.

- Surface preparation : blast the steel with a dry abrasive to a surface purity SA 2.5 + cleaning.
- Primer epoxy Zinc rich primer + 2 layers epoxy with NDFT 200 µm or following your standard

The Nominal Dry Film Thickness (NDFT) of the system to be at least 200 microns. RAL to be defined.

b) **Painting of hot surfaces**

Confer surface preparation
Dust removal with dry air, soft brush and vacuum cleaner
Application of 2 layers 125 µm DFT, 100% of Hi Temp 1027, by PPG or equivalent to be approved

Pressure Specifications

- *Directive 2014/68/EU (PED) of the European Parliament and of the Council of 15 May 2014 on the harmonization of the laws of the Member States relating to the*

making available on the market of pressure equipment or equivalent.
- *Directive 2014/68/EU replace Directive 97/23/CE since July the 19th of 2016 or equivalent.*

This document specifies methodology used for 'Piping Classes' definition according to European Pressure.

Equipment Directive (PED) 2014/68/EU, of May the 15th of 2014 (or equivalent):
A Piping Class relates to a fluid for a fixed pressure and temperature range (fluid list) with its associated physical and chemical characteristics for a given situation. Piping Class components are defined to be fully compatible with each other (prefabrication, assemblies). In order to have restricted materials and thickness, and to optimize the supply accordingly, the Piping Classes can be used for several fluids. Permissible Pressure and Allowable Temperature of the different fluids must be used for the checking in all situations taken into account.

The used terms are those of the PED:
- *PS: Maximum Permissible Pressure, associated with protection or safety devices,*
- *TS : Température minimale/maximale admissible.*

Flanges rating is indicated as well as the flange face, circular flanges for pipes, valves, fittings and accessories, designated in Class

Process data please refer to General Arrangment Drawing equipment

Ps : 3.3 barg
PT : 4.8 barg
T : 0…150°C
V : 4300 l

Rem:

A nameplate identifying the facility should exist. Taking in account the machinery directive the nameplate should contain the followings:

- The name and the manufacturer's full address and, where applicable, his authorized representative.
- The designation of the machine.
- The 'CE' sign or equivalent.
- The designation of series or type.
- The serial number, if any.
- Year of construction.