ALPHA CARBONE
THERMOLYSIS PROJECT
BREVANS (39)

Tender package for a filter for a hopper for recovered carbon black powder

Alpha Carbone
4, Rue Jules Védrines – BP 94204 - 31031 TOULOUSE Cedex 4
05 62 16 72 82 05 62 16 72 79
Siège social : 22, Allée du Bois – 39100 BREVANS
SarL au capital de 10 000 Euros - SIRET 519 142 848 00018

The aim of this tender package is to specify the requirements of a filter suitable for recovered carbon black which will be installed on a hopper outside of a building. The context will be presented before explaining the requirements.

1 OVERALL CONTEXT

ALPHA CARBONE is a tire recycling plant that uses an innovative steam-thermolysis process to recover materials from end-of-life tires. The process degrades the rubber matrix from tires to obtain three products: recovered Carbon Black (rCB), Thermolysis Derived Oil (TDO) and scrap metal.
After 5 years of discontinuous production, the operation of the installation was stopped in January 2020 in order to allow the resizing and the industrialization of the process. The purpose of this revamping is to ensure nominal and continuous operation of the steam-thermolysis installation. The end of the work and the restart of the installation is planned for the end of 2025.
Carbon black is post-treated to satisfy the needs of the tire industry to use recovered material in their products. This post-treatment phase involves iron removal, grinding, granulation, drying stages and conditioning. The hopper where will be installed the filter is designed to collect the rCB from au pneumatic conveying system to feed a dosing hopper.

ALPHA CARBONE contacts your company in order to establish a quotation for only the filter.

2 SPECIFICATIONS

The facility will operate 24h/24h for a total of 320 days or 8000h/year. As such, the equipment will have to operate continuously, automatically and in conjunction with a common management command to the rest of the unit. We highlight the fact that carbon black is a powdered product that has both dust explosion risk and high potential to soil. This is why the equipment should be as airtight as possible. The ATEX classification should be ATEX 22. The dosing hopper and its filter are located outside the building.

The filter should be as small as possible.

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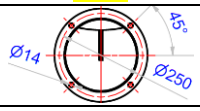
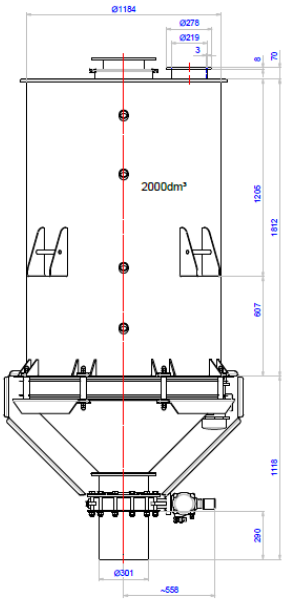
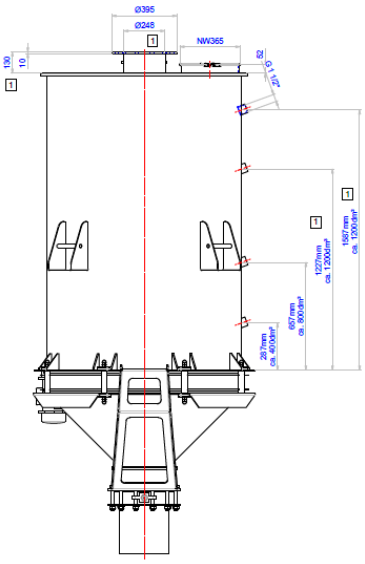
The following tables gather the information necessary for specifying a suitable filter for the dosing hopper. We ask the supplier to inform us if some critical parameters are missing from this tender package.

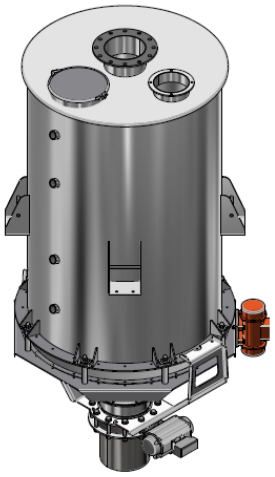
EQUIPMENT	
Process section: Carbon Black production	Aim of the equipment: To allow the hopper to evacuate the air during filling of product.
TAG of the equipment: To be confirmed	Equipment: Filter for a gravimetric feeder

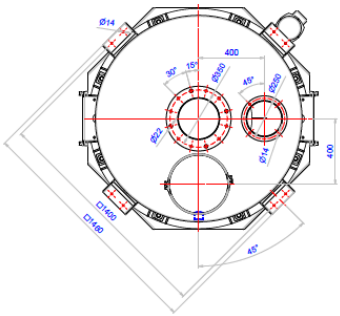
WORKING CONDITIONS		
Product		Agglomerate of recovered Carbon Black (rCB) + Ash (75% + 25%)
Type of product		Solid, powder
Bulk Density (kg/m3)		200
Particle size:	d99	9-12 µm
	d97	7-9 µm
	d80	4-6 µm
	d50	2 µm
	d10	< 1 µm
Inlet temperature (Grinder outlet temperature)		50-80°C
Moisture (%)		<1%
Other products characteristics		The dry solid behaves as a "fluid" when it's mixed. It can be compacted. It is lightly abrasive.
Product mass flow rate in the dosing hopper		800 to 1050 kg/h
Filter area (calculated by HUZAP)		2 m²
Flange connexion (possible to install a connection sleeve)		
Type of feeding of the dosing hopper		■ Continuous □ Discontinuous
Operation of the dosing system		■ Continuous □ Discontinuous
On / Off frequency		Maximum: 4 start / hour Maximum: 20 start / day
Operating time without being shut-down		From 1 minute to 24/24h, 7/7j

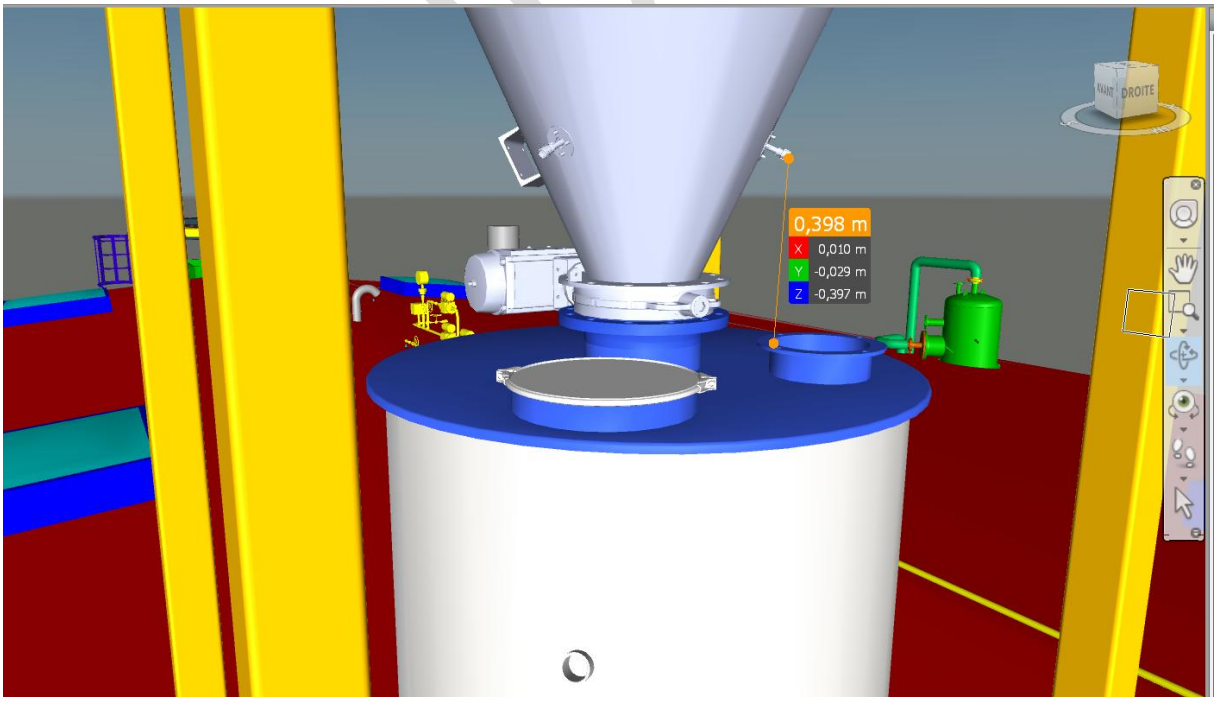
REQUIRED DOCUMENTS	
CE marking	X
ATEX certificate	X
External drawing with all flanges and other connexions data (DN, PN, Schedule, …)	X
Sectional drawing	X
STEP drawing	X
3d Model	X
Data sheet (Electrical, Mechanical and Material)	X











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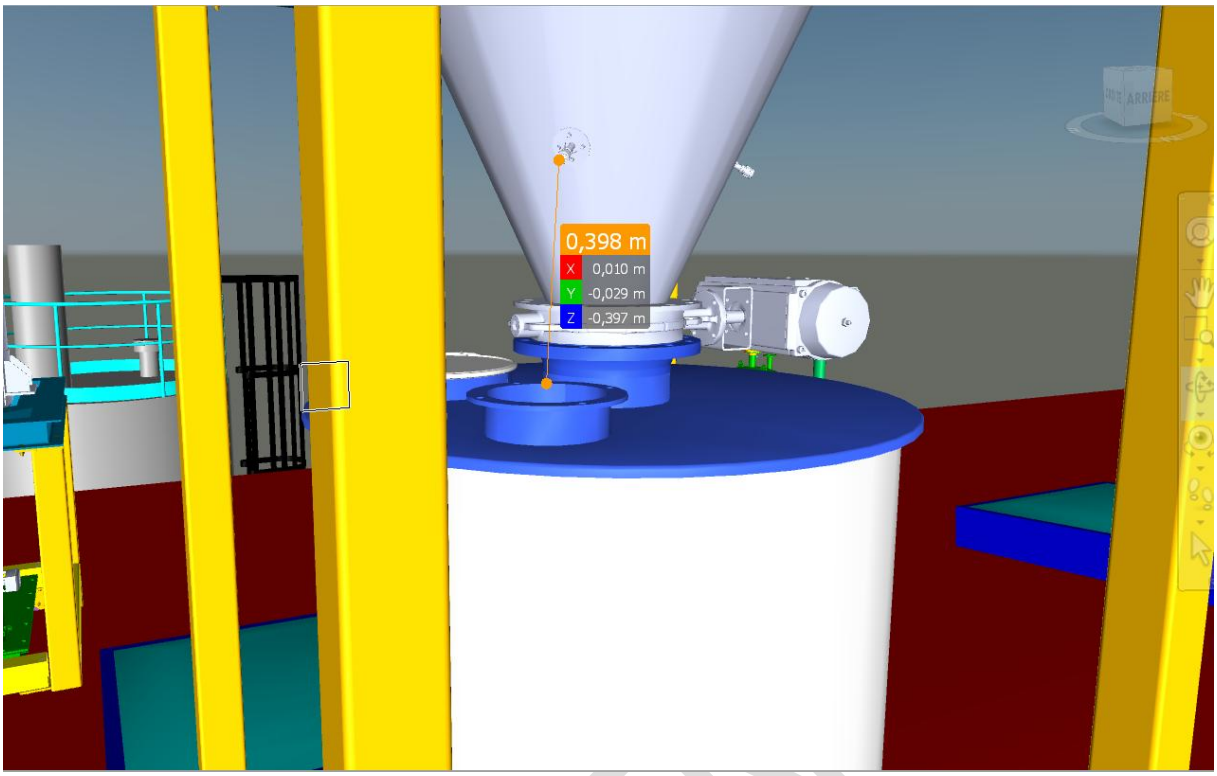
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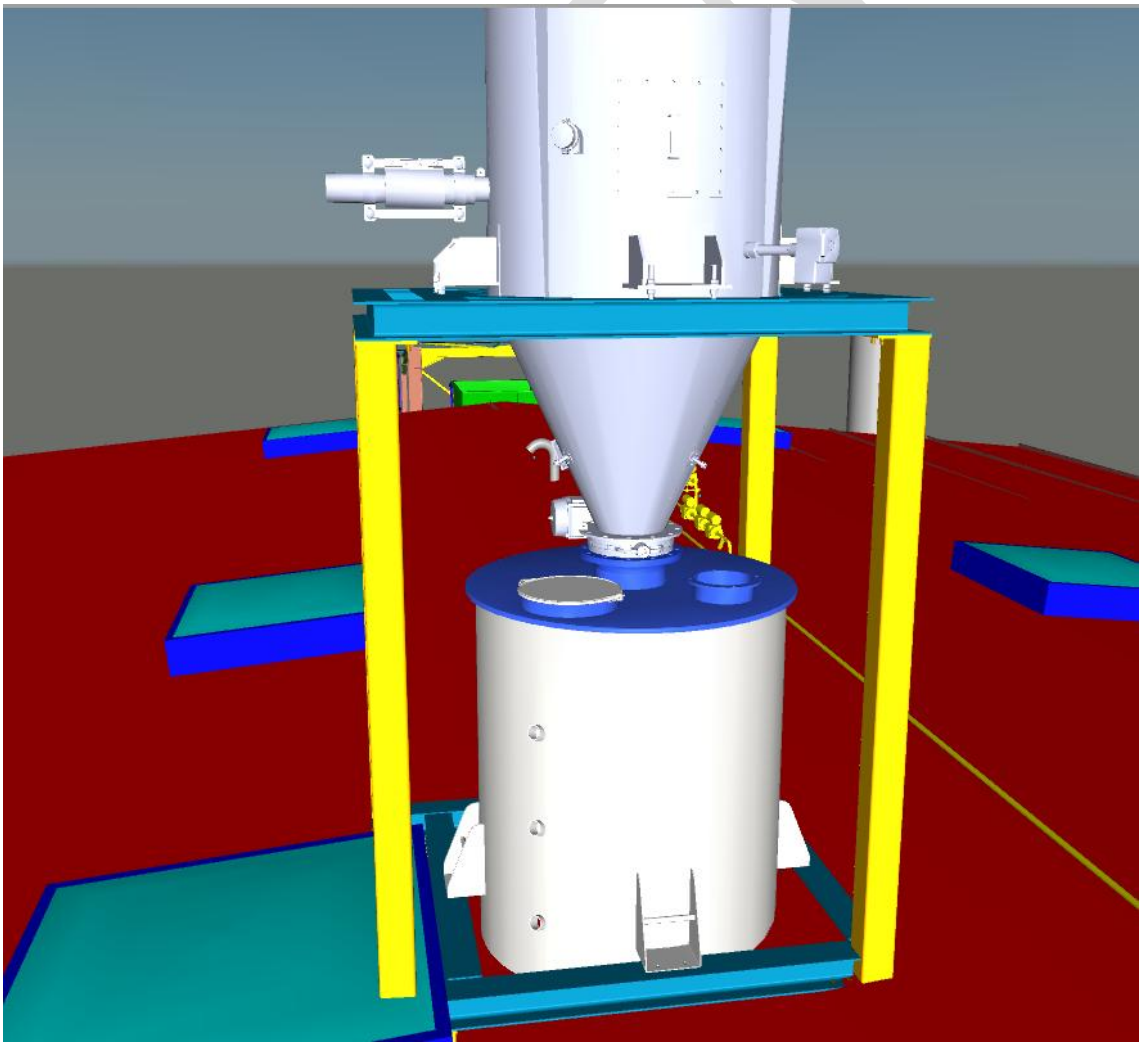

4 RESPONSE

For any information, please contact :

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5 ORDER INFORMATION

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