***Polyelectrolyte dosage:***

Cationic polyelectrolyte is used for chemical conditioning of this type of sludge.

It is estimated a dose of 8 kg polyelectrolyte/t (average conditions) and 10 kg polyelectrolyte/t

(max. conditions)

The reagent is prepared in three automatic continuous-mode production installations that consists of a vat with three compartments, two of them with agitation. The polyelectrolyte is dosed in powder form by means of a dosage screw that includes a storage hopper of 100 liters.

With each unit a continuous unitary production of 0.5% polyelectrolyte is achieved at 8,000 l/h.

The dosage will be carried out by means of two (1+1) progressive cavity pumps; with a flow of 1,400 - 3,700 l/h and 10 w.c.m. o pressure. All pumps will be equipped with variable frequency converters.

Water is incorporated in the discharge of the dosage pumps to dilute the reagent to 0.2% and the dilution flow is regulated by means of in-line rotameters.

The polyelectrolyte is dosed in the sludge intake pipes to the centrifuges.

**POLYELECTROLYTE SOLUTION - PREPARATION AND DOSING**

Reagent:

Polyelectrolyte

**Doses and Consumption**

Dry matter to treat

• By design: 1.600,00 kg/h

• Maximum by pumping: 1.800,00 kg/h

Dose

• Average: 8,00 kg/tn

• Maximum: 10,00 kg/tn

Hourly consumption at maximum load by pumping

• Average: 14,40 kg/h

• Maximum: 18,00 kg/h

Daily consumption

• Average: 204,80 kg/d

• Maximum: 256,00 kg/d

**Storage of powdered product**

Type of supply:

Solid

Commercial product purity: 100 % Density: 0,50 kg/l Autonomy of storage by average dose: 15,00 d Required capacity: 3.072,00 kg Adopted capacity: 3.100 kg

**Dilution**

Preparation system:

Automatic

Number of installed equipments: 1 ut

Number of equipments on duty: 1 ut

System:

Required capacity

|  |  |  |
| --- | --- | --- |
| • Average: | 14,40 | kg/h |
| • Maximum: | 18,00 | kg/h |
| Dilution concentration: | 0,50 | % |
| Number of dilution equipments on duty: | 1 | ut |
| Number of compartments for each tank: | 3 | uts |
| Number of dilution mixers per equipment: | 2 | uts |
| Required capacity |  |  |
| • Average dose: | 2.880,00 | l/h |
| • Maximum dose: | 3.600,00 | l/h |
| Adopted capacity: | 8.000 | l/h |
| Volume: | 8.000 | l |
| Maturation time: | 30 | min |

Volumetric dos

**Dosing**

System:

Progressive cavity pump

Total number of installed pumps: 2 uts Total number of pumps on duty: 1 ut Total number of stand-by pumps: 1 ut Maximum unitary flow demanded: 3.600,00 l/h Maximum unitary flow adopted: 3.700 l/h Range of flow adopted: 1.400 - 3.700 l/h

Type of dosage: Range adjustment: Control system:

Post-dilution to dosage "in line":

Automatic proportional to the flow

Automatic 4 ÷ 20 mA signal

Frequency converter

• Secondary dilution concentration in line: 0,20 %

• Maximum unitary flow water for dilution: 5.550 l/h

• Measurement system:

Variable area flowmeter

• Number of installed rotameters: 1 ut

• Number of rotameters on duty: 1 ut

|  |  |  |
| --- | --- | --- |
|  • Required unitary flow: | 5.550 | l/h |
|  • Unitary flow adopted: | 500 - 6.300 | l/h |