1. **Description of composite pipe**

Reinforcement layer

Inner layer (core)

Outer layer



* 1. Schematic diagram of a composite pipe

Fig. 1. Design record of composite pipe

* 1. Construction materials

Table 1. Composite pipe material list

|  |  |
| --- | --- |
| Inner layer | HDPE, PERT, PA |
| Reinforcement | Metal reinforced or non-metallic tape |
| Outer layer | HDPE, PERT |

HDPE – high density polyethylene,

PERT – high temperature resistant polyethylene,

PA – polyamide

1. **Layout**

Obraz zawierający zrzut ekranu, ciemność, czarne, linia

Opis wygenerowany automatycznie

Fig.1. Schematic diagram of the technological line for applying the reinforced and external layers together with the winding and transport system.

1. **List of basic line devices**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Item** | **Unit** | **Quantity** | |
| 1 | Drum winder | pcs | 2 | 3 |
| 2 | Pipe centering stabilizer | pcs | 1 | 1 |
| 3 | Haul off | pcs | - | 2 |
| 4 | \*Wrapping machine for reinforcing tape | set | 1 | 2 |
| 5 | \*IR heater | Set | 1 | 2 |
| 6 | \*Air cooling ring | set | 1 | 2 |
| 7 | Ekstruder | pcs | - | 1 |
| 8 | Cross die head | pcs | - | 1 |
| 9 | Air cooling ring after cross die | set | 1 | 1 |
| 10 | Vacuum tank | pcs | 1 | 1 |
| 11 | Cooling tank | pcs | - | 1 |
| 12 | Laser printer | pcs | - | 1 |
| 13 | Steel drum | pcs | 4 | 4 |
| 14 | Winder for packing pipes into coils | pcs | - | 1 |
| 15 | Drum transport device | pcs | 1 | 1 |

Note:

\* 1 set of devices consists of 2 wrapping machines (1 pc. right turn wrapping, 1 pc. left turn wrapping), 2 IR heaters and 2 air cooling rings. One wrapping machine can wind two layers of thin glass fiber reinforced tape, therefore one wrapping cycle can give max. 4 reinforcement layers for concept I and max. 8 in concept II