

Technical specification for a new head extruder dedicated for extrusion of highly filled, demanding, cross-linked FR-XLPE/XLPO/LSOH insulation materials.

- Technical analysis and three-dimensional design of extrusion head based on rheological study and flow simulation for specified types of insulation materials.
 - FR-XLPE
 - XLPO
 - LSOH
 - XL-LSOH
 - PVC/PE

3D flow analysis must confirm, that proposed new design of head extruder will provide us with possibility of high-speed production of listed, demanding and highly filled materials without risk of stagnation/overheating and even, stable pressure distribution with good radial velocity/centricity. Minimum speed for 1,5mm² cross section wire is set to 300m/min for FR-XLPE / XLPO materials.

- New extruder head will cover listed wire cross-sections:
 - 1,5mm²
 - 2,5mm²
 - 4mm²
 - 6mm²
- New extruder head will cover listed insulation thickness:
 - 0,3mm – 1,2mm
- Extrusion Head with fine centering
- Max opening Die: 25mm
- Line direction: Right to left
- Composed by:
 - Set distributor fine tuning (centering from the rear with spherical system) for XLHFFR with special surface treatment (hardness up to 2200 HV) for customer tooling with outer diameter 24mm.
 - Heating elements
 - Neutral ring
 - Adjusting die nut
 - Set for assembly and disassembly tools
 - Special cleaning tools made in brass
 - Set distributor fine tuning (centering from the rear with spherical system) for PVC/PE with special surface treatment (hardness up to 2200HV) for customer tooling with outer diameter 24mm.
 - Skin ring for PVC/PE
 - Skin ring for XLHFFR
 - Manual By-Pass for main extruder 80mm
 - Manual By-Pass for auxiliary extruder 30mm
 - Connecting flange for main extruder 80mm
 - Connecting flange for auxiliary extruder 30mm

- Alternative distributor for auxiliary extruder for green-yellow skin insulation production (two color stripes, 30%/70%)

Tables with predicted material usage per 1h with target speed 300m/min

Material brand name:	HFX551
Material:	1 (Cross-linked LSFOH)
Max. extrusion temp.:	210 st.C
Density:	1,41
Target machine speed:	300
Cross-section:	Material usage kg/h:
1,5RM	135,36
2,5RM	164,52
4RM	201,78
6RMC	211,68

Material brand name:	SX0612ES
Material:	2 (Cross-linked FR-LSOH)
Max. extrusion temp.:	160 st.C
Density:	1,52
Target machine speed:	300
Cross-section:	Material usage kg/h:
1,5RM	145,8
2,5RM	177,48
4RM	217,44
6RMC	228,24

Material brand name:	GFR320
Material:	3 (Cross-Linked FR-XLPO)
Max. extrusion temp.:	240 st.C
Density:	1,35
Target machine speed:	300
Cross-section:	Material usage kg/h:
1,5RM	129,6
2,5RM	157,68
4RM	193,14
6RMC	202,68

Material brand name:	FR4450
Material:	4 (Cross-linked FR LSOH LDPE)
Max. extrusion temp.:	190 st.C
Density:	1,1
Target machine speed:	300
Cross-section:	Material usage kg/h:
1,5RM	105,48
2,5RM	128,34
4RM	157,32
6RMC	165,06

Material brand name:	FR4451
Material:	5 (Cross-linked FR LSOH LDPE)
Max. extrusion temp.:	190 st.C
Density:	1,19
Target machine speed:	300
Cross-section:	Material usage kg/h:
1,5RM	114,12
2,5RM	138,96
4RM	170,28
6RMC	178,74

Contact person:

Jakub Węgrzyn Jakub.wegrzyn@tfkable.com (Project Manager)

Rafał Kania rafa.kania@tfkable.com (Production and process engineer)