Energy saving WSM / WSMF – Weber extruder and KraussMaffei injection moulding machine

Example Weber extruder DS 10.22

Below the details of the experimental procedure:

Extrusion line 36:	Weber DS 10.22
Insulated heating zones:	Zone 1 and 2
Duration:	24 hours each trial
Ambient temperature in the area of the extrusion line:	23 – 25 °C
Profile geometry – main profile with output capacity:	ca. 300 kg/h

Results:

ZONE	STATE	ENERGY CONSUMPTION (kWh per 24 hours)	ENERGY SAVING (kWh per 24 hours)
Zone 1	Uninsulated	96.93	
Zone 1	Insulated	77.76	19.17 (19.77%)
Zone 2	Uninsulated	38.31	
Zone 2	Insulated	26.11	12.10 (31.85%)

Example calculation:

Assuming the aforementioned potential savings, with a total daily saving of 31.27 kWh, an estimated 6,500 operating hours per year and an electricity price of €0.10 per kWh, the following potential savings can be calculated:

31.27 kWh / 24 h x 6,500 h x €0.10 = €850 per extrusion line

This must be weighed against the necessary investment costs for the heat shield coats.

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Example KraussMaffei injection moulding machine KM 120-620 B2

- Power rating heating system: 10.6 kW

	Without insulation	With insulation
Power	5.3 kW (average operating time: 50% of rated power)	3.5 kW (1/3 energy saving compared to uninsulated heater)
Annual energy consumption in one-shift operation (8 hours per day) and 250 work days per year	10600 kWh	7000 kWh
Annual energy costs, at €0.10 per kWh	ca. €1060	ca. €700

Savings achieved by usage of heat shield coats: €360 per year