

FES.

- Gravity **17.3 BLG**
- ABV **7.4 %**
- IBU **43**
- SRM **28.6**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **19 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **21.2 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **15.9 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **19 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4.3 kg (81.1%)	80 %	4
Grain	Caraaroma	0.3 kg (5.7%)	78 %	400
Grain	Carafa	0.1 kg (1.9%)	70 %	664
Grain	Płatki owsiane	0.4 kg (7.5%)	85 %	3
Grain	Jęczmień palony	0.2 kg (3.8%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	24 g	50 min	13.5 %
Boil	Lublin (Lubelski)	32 g	10 min	4 %