

FES_wel

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **40**
- SRM **41.1**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **17 liter(s)**
- Trub loss **5 %**
- Size with trub loss **17.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **21.6 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **23.2 liter(s)**

Steps

- Temp **67 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **18 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **8.8 liter(s)** of **76C** water or to achieve **21.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.6 kg (69.9%)	85 %	7
Grain	Strzegom Czekoladowy ciemny	0.2 kg (3.9%)	68 %	1200
Grain	Monachijski typ II 20-25 EBC Weyermann	0.3 kg (5.8%)	80 %	20
Grain	Strzegom Barwiący	0.2 kg (3.9%)	68 %	1300
Grain	Jęczmień palony	0.25 kg (4.9%)	55 %	985
dodany po 45min				
Grain	Płatki owsiane	0.6 kg (11.7%)	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	35 g	60 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale