

Grodziski FES

- Gravity **15.7 BLG**
- ABV **6.6 %**
- IBU **52**
- SRM **34.5**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.8 liter(s) / kg**
- Mash size **17.8 liter(s)**
- Total mash volume **24.1 liter(s)**

Steps

- Temp **68 C**, Time **70 min**
- Temp **72 C**, Time **20 min**
- Temp **77 C**, Time **1 min**

Mash step by step

- Heat up **17.8 liter(s)** of strike water to **76.6C**
- Add grains
- Keep mash **70 min** at **68C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **77C**
- Sparge using **13.9 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------------------------|----------------|-------|------|
| Grain | Grodziski pszeniczny wędzony dębem | 4 kg (63%) | 80 % | 3 |
| Grain | Viking Pale Ale malt | 1 kg (15.7%) | 80 % | 5 |
| Grain | Caraaroma | 0.3 kg (4.7%) | 78 % | 400 |
| Grain | Płatki owsiane | 0.5 kg (7.9%) | 85 % | 3 |
| Grain | Fawcett - Czekoladowy | 0.3 kg (4.7%) | 73 % | 1200 |
| Grain | Weyermann - Carafa II | 0.25 kg (3.9%) | 70 % | 837 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|--------|--------|--------|------------|
| Boil | Magnat | 35 g | 60 min | 15.2 % |