

# Grodziski FES

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- 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 %