

# FES BITWA

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- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **43**
- SRM **46.5**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **15.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.9 liter(s) / kg**
- Mash size **12.2 liter(s)**
- Total mash volume **16.4 liter(s)**

## Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **1 min**

## Mash step by step

- Heat up **12.2 liter(s)** of strike water to **71.6C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **7.9 liter(s)** of **76C** water or to achieve **15.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	1.5 kg (35.7%)	81 %	4
Grain	Strzegom Monachijski typ I	1.1 kg (26.2%)	79 %	16
Grain	Płatki owsiane	0.5 kg (11.9%)	60 %	3
Grain	Fawcett - Crystal	0.25 kg (6%)	70 %	160
Grain	Special B Malt	0.25 kg (6%)	65.2 %	315
Grain	Weyermann - Dehusked Carafo II	0.25 kg (6%)	70 %	837
Grain	Castle Chocolat	0.25 kg (6%)	60 %	827
Grain	Jęczmień palony	0.1 kg (2.4%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Northern Brewer	30 g	60 min	9 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	6.6 g	Fermentis