

# FES

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **28**
- SRM **30.4**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **23 liter(s)**
- Total mash volume **30.6 liter(s)**

## Steps

- Temp **65 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

## Mash step by step

- Heat up **23 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **30 min** at **65C**
- Keep mash **30 min** at **72C**
- Sparge using **13.7 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	4 kg (52.3%)	79 %	6
Grain	Strzegom Monachijski typ I	0.6 kg (7.8%)	79 %	16
Grain	Strzegom Czekoladowy ciemny	0.4 kg (5.2%)	68 %	1200
Dodam w połowie zacierania				
Grain	Jęczmień palony	0.15 kg (2%)	55 %	985
Dodam na koniec zacierania				
Grain	Płatki owsiane	0.5 kg (6.5%)	85 %	3
Grain	Pilzneński	2 kg (26.1%)	81 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Oktawia	30 g	60 min	9.2 %
Boil	East Kent Goldings	30 g	6 min	5.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM52 Amerykański Sen	Ale	Slant	200 ml	Fermentum Mobile