fes 2017

- Gravity **17.3 BLG**
- ABV **---**
- IBU **59**
- SRM **52.4**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **6 %**
- Size with trub loss **22.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **13 %/h**
- Boil size **27.6 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

Steps

- Temp **66 C**, Time **40 min**
- Temp **64 C**, Time **20 min**
- Temp **72 C**, Time **5 min**

Mash step by step

- Heat up **19.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **20 min** at **64C**
- Keep mash **40 min** at **66C**
- Keep mash **5 min** at **72C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	4.3 kg *(65.2%)*	79 %	6
Grain	Strzegom Monachijski typ I	0.7 kg *(10.6%)*	79 %	16
Grain	Płatki owsiane	0.5 kg *(7.6%)*	85 %	3
Grain	Strzegom Czekoladowy 400	0.4 kg *(6.1%)*	68 %	400
Grain	Strzegom Czekoladowy 1200	0.3 kg *(4.5%)*	68 %	1202
Grain	Castelmalt crystal	0.2 kg *(3%)*	75 %	150
Grain	Jęczmień palony	0.2 kg *(3%)*	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	50 g	60 min	8.4 %
Boil	Iunga	20 g	15 min	12.9 %
Boil	Iunga	30 g	5 min	12.9 %

Yeasts

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	200 ml	Safale