

FES

- Gravity **16.6 BLG**
- ABV ---
- IBU **53**
- SRM **37.9**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **12.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **13.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **16.6 liter(s)**

Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.4 liter(s)**
- Total mash volume **15.3 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **11.4 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **76C**
- Sparge using **9 liter(s)** of **76C** water or to achieve **16.6 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------|-----------------|-------|-----|
| Grain | Strzegom Pilzneński | 3.1 kg (81.2%) | 80 % | 4 |
| Grain | Barley, Flaked | 0.3 kg (7.9%) | 70 % | 4 |
| Grain | Carafa II | 0.125 kg (3.3%) | 70 % | 812 |
| Grain | Jęczmień palony | 0.125 kg (3.3%) | 55 % | 985 |
| Grain | Strzegom Karmel 300 | 0.166 kg (4.4%) | 70 % | 299 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Boil | Admiral | 20 g | 60 min | 14.3 % |
| Aroma (end of boil) | Sybilla | 20 g | 15 min | 3.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|-------|--------|------------|
| Safale S-04 | Ale | Slant | 60 ml | Safale |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|-----------------|--------|---------|--------|
| Water Agent | gips piwowarski | 2 g | Mash | 60 min |