

# FES podejście 12321

- Gravity **15 BLG**
- ABV **6.2 %**
- IBU **55**
- SRM **33.2**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **5 %**
- Size with trub loss **25.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **31.7 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.9 liter(s) / kg**
- Mash size **21.2 liter(s)**
- Total mash volume **28.5 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 **21.2 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 **17.8 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

## Fermentables

| Type  | Name                | Amount         | Yield | EBC  |
|-------|---------------------|----------------|-------|------|
| Grain | Pilzneński          | 4.8 kg (65.8%) | 81 %  | 4    |
| Grain | Płatki owsiane      | 0.6 kg (8.2%)  | 85 %  | 3    |
| Grain | Płatki jęczmienne   | 0.6 kg (8.2%)  | 85 %  | 3    |
| Grain | VM Pale Cookie      | 0.3 kg (4.1%)  | 70 %  | 30   |
| Grain | VM Caramel Aromatic | 0.3 kg (4.1%)  | 75 %  | 200  |
| Grain | Carafa III Special  | 0.4 kg (5.5%)  | 70 %  | 1034 |
| Grain | Jęczmień palony     | 0.3 kg (4.1%)  | 55 %  | 985  |

## Hops

| Use for | Name   | Amount | Time   | Alpha acid |
|---------|--------|--------|--------|------------|
| Boil    | Magnum | 50 g   | 60 min | 13.3 %     |

## Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale  | Dry  | 13.2 g | Fermentis  |