

# FES od Doris

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- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **38**
- SRM **32**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.2 liter(s)**
- Total mash volume **25.6 liter(s)**

## Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **75 C**, Time **5 min**

## Mash step by step

- Heat up **19.2 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **75C**
- Sparge using **12.7 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	5 kg (78.1%)	82 %	4
Grain	Caraaroma	0.5 kg (7.8%)	78 %	400
Grain	Carafa	0.25 kg (3.9%)	70 %	664
Grain	Płatki jęczmienne	0.4 kg (6.3%)	80 %	4
Grain	Jęczmień palony	0.25 kg (3.9%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum PL	25 g	55 min	13.5 %
Boil	Fuggles	50 g	10 min	3.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale