

Retrofit and save costs!

Field Study 200-05_August 2022
PRISMA compared to ZENIT, Ne 30 and Ne 40

Field study results leave no doubt about the technological advantage of **YarnMaster® PRISMA**.

The study took place in **India** at a Loepfe customers plant to compare **YarnMaster® PRISMA** to **YarnMaster® ZENIT** on productivity (cut-rate), resulting fabric quality and cost savings.

PRISMA proves to be the right choice for profitable yarn clearing in the application of **100% cotton compact yarns Ne 30** and **Ne 40** produced for quality fabrics.



Retrofit and save costs!

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1. Overall summary

Significantly fewer cuts with PRISMA

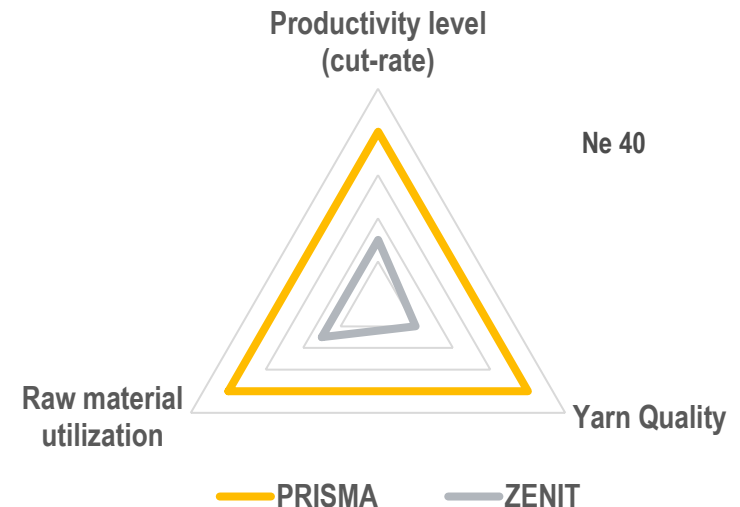
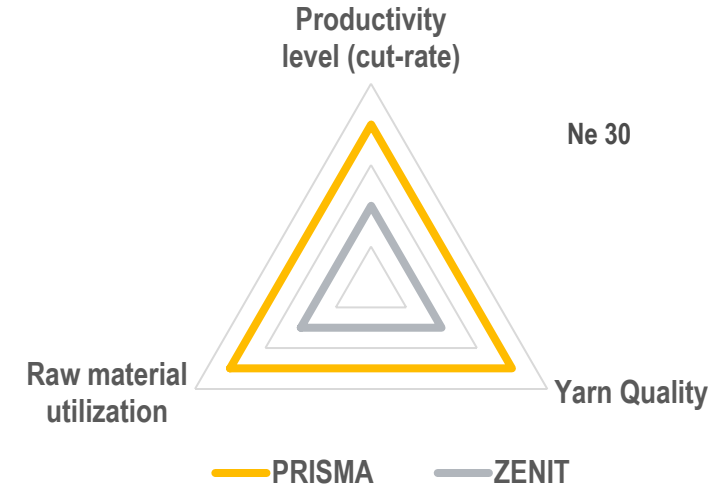
- In NSLT classification, up to 36% fewer cuts, and in foreign fibers classification up to 69% fewer cuts
- Total Cuts of ZENIT are 64% higher in Ne 30 and 132% higher in Ne 40

Fabric Quality

- ≈ 30% less remaining faults detected with classimat in the PRISMA cleared yarn
- PRISMA can achieve 39% less contamination / kg in the woven fabric

Total cost Savings / Year in USD / winding machine

- **Ne 30: USD 2516.40**
- **Ne 40: USD 2826.82**



2. Study set-up

Sensors:

- PRISMA DMFP* compared to ZENIT DFP* on productivity (cut-rate), resulting fabric quality and cost savings

Location:

- Loepfe Customer India

Raw Material:

- 100% cotton (MECH) from India Ne 30 carded compact
- 100% cotton (MECH) from India Ne 40 combed compact

Winder:

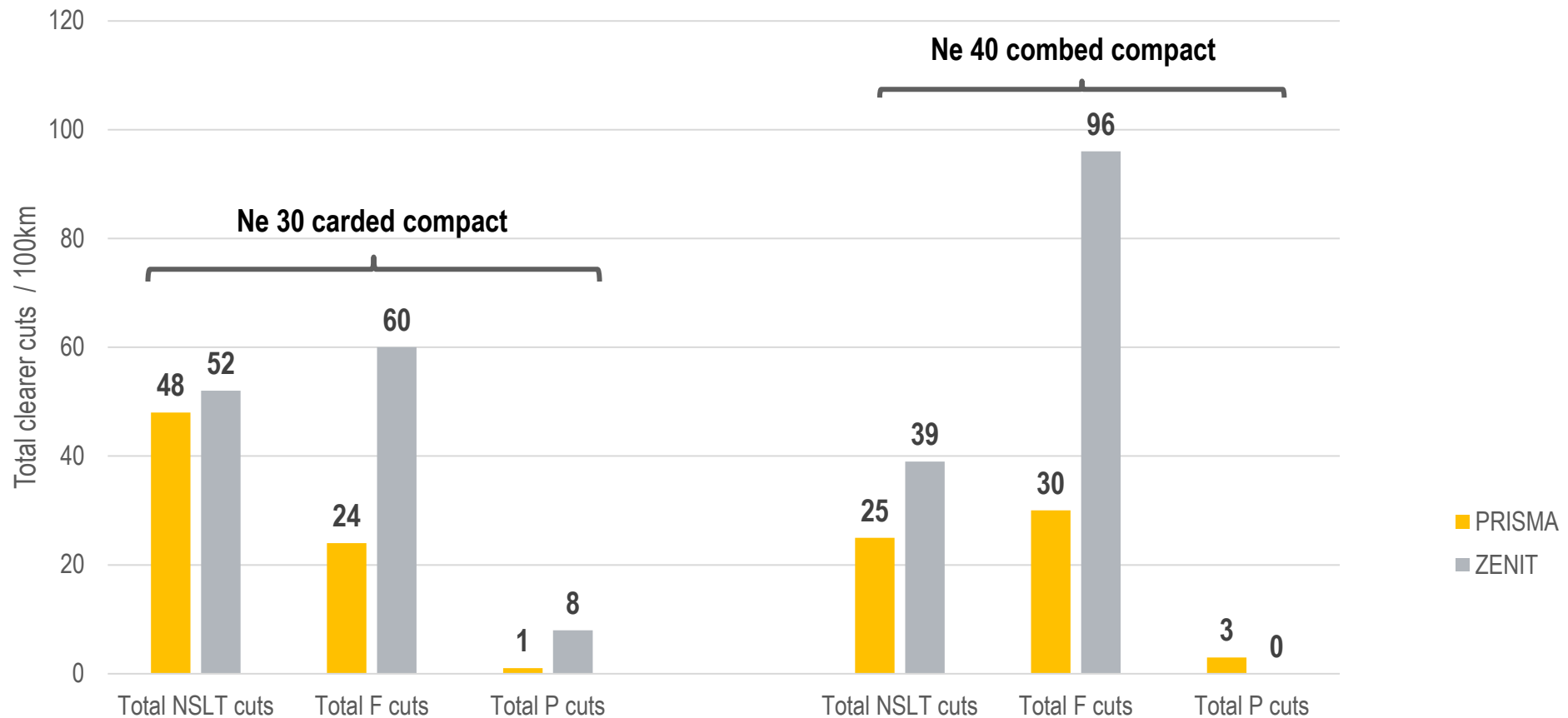
- Studies were done with both clearers on the same winding machine

Goal:

- Better clearing performance: Less cuts, higher efficiency and better fabric quality

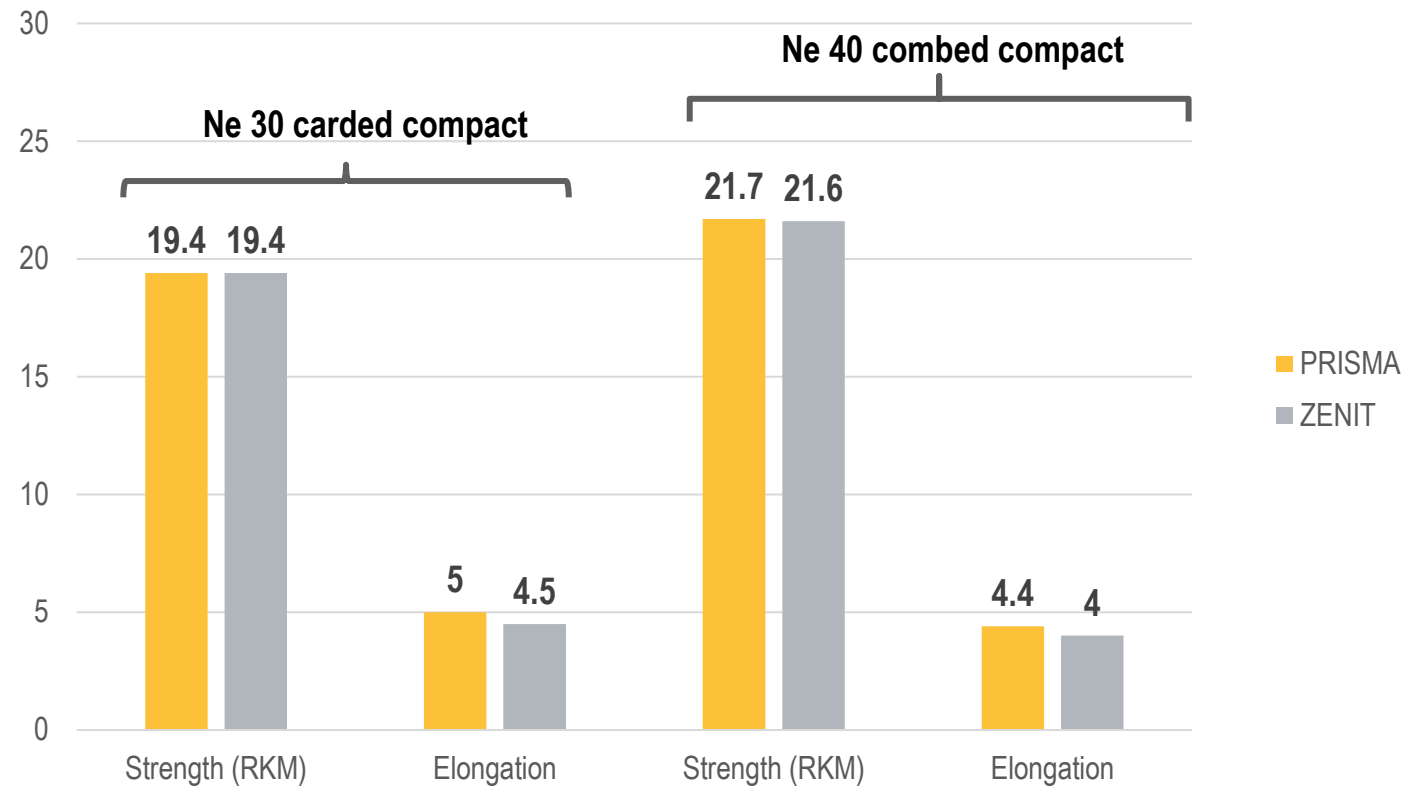
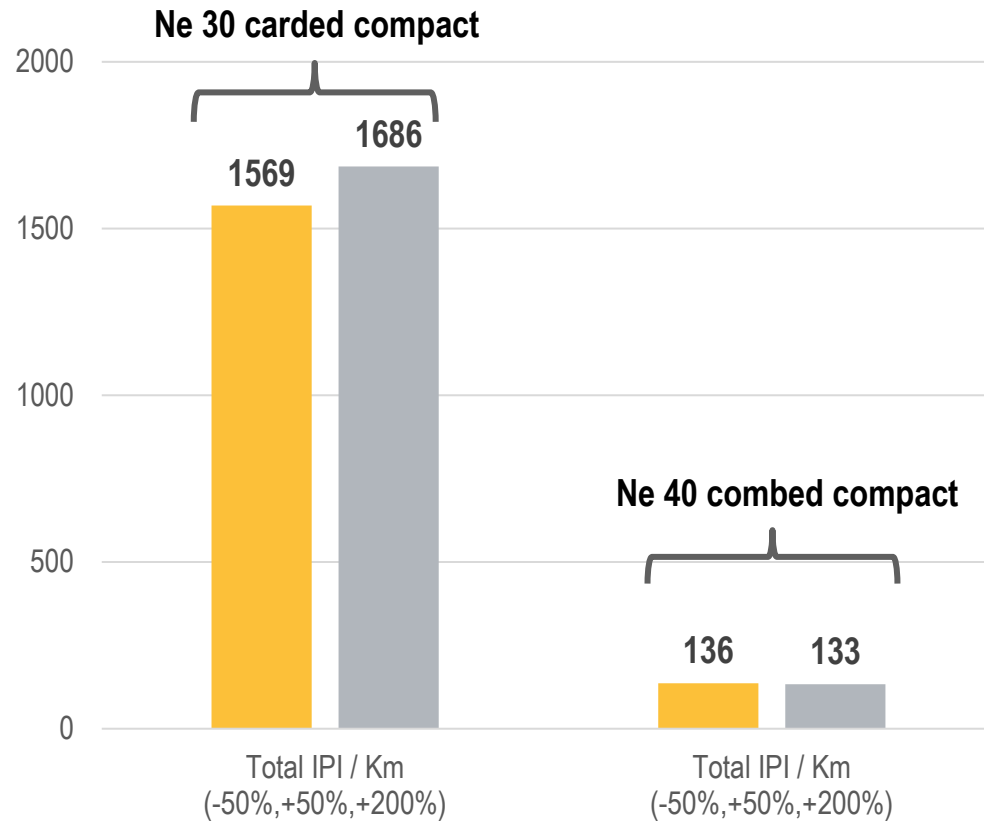
3. Results on yarn clearers

- Significantly fewer cuts with PRISMA, especially in the F cuts
- In NSLT classification, up to 36% fewer cuts and in foreign fibers classification up to 69% fewer cuts
- Total Cuts of ZENIT are 64% higher in Ne 30 and 132% higher in Ne 40



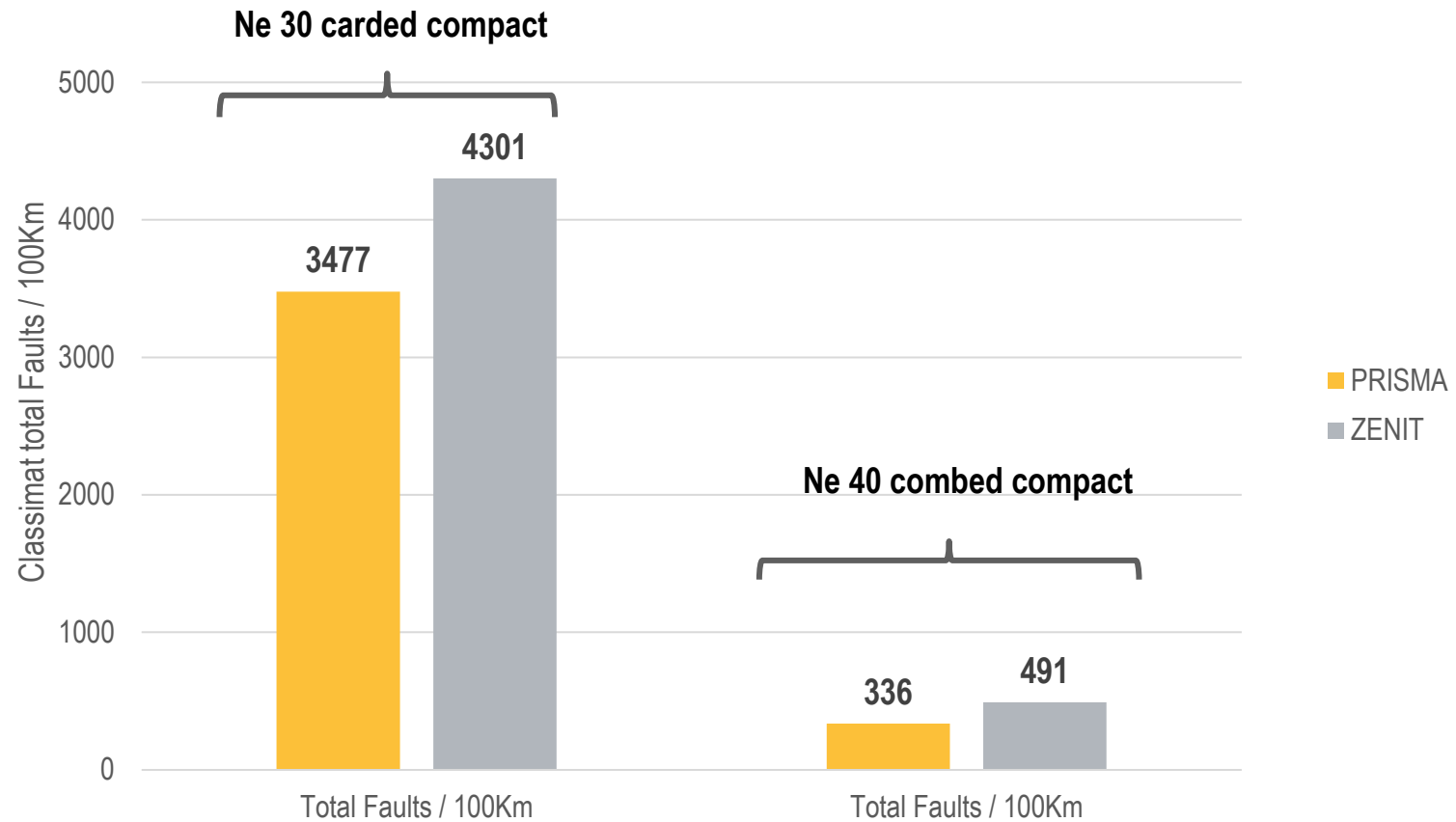
4. Results on laboratory testing

- The results of the laboratory are very similar, means same quality



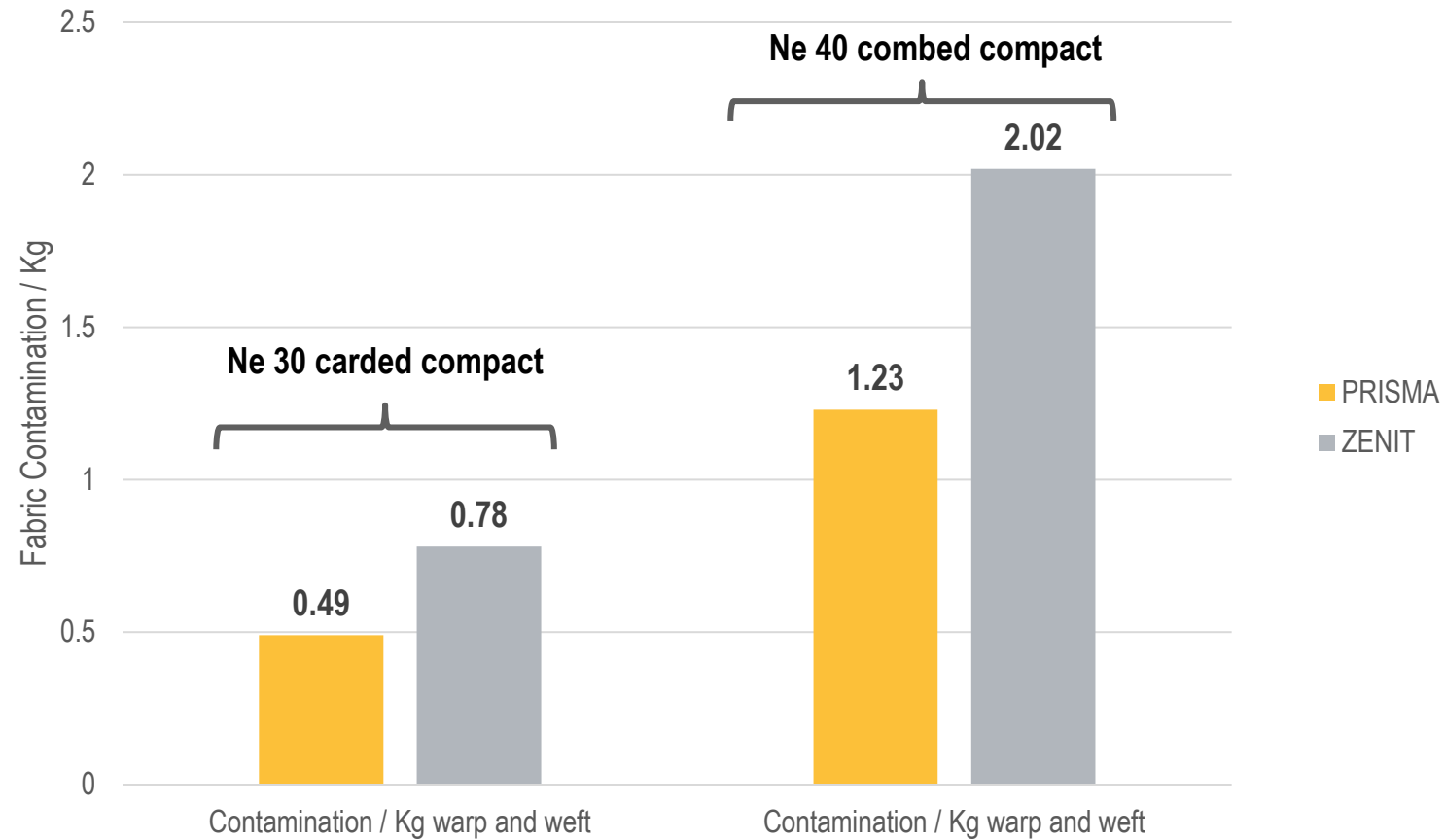
5. Results on classimat testing

- ≈ 30% less remaining faults detected with Classimat in the PRISMA cleared yarn



6. Results on final fabric

- PRISMA can achieve 39% less contamination / kg in the fabric



7. Cost savings

| Cost savings | Ne 30 carded compact | | Ne 40 combed compact | |
|---|----------------------|-----------------|----------------------|-----------------|
| | YM ZENIT | YM PRISMA | YM ZENIT | YM PRISMA |
| Total Cuts | 120 | 73 | 135 | 58 |
| Cut Savings / 100 km | - | 47 | - | 77 |
| Waste cost savings / Year in USD / winding machine | - | 669.30 | - | 1'423.48 |
| Energy and air cost savings / year in USD / winding machine | - | 1'320.90 | - | 1'321.26 |
| Savings through higher productivity / year in USD / winding machine | - | 526.20 | - | 82.08 |
| Total savings / year in USD / winding machine | | 2'516.40 | | 2'826.82 |

Basis for calculation Ne 30:

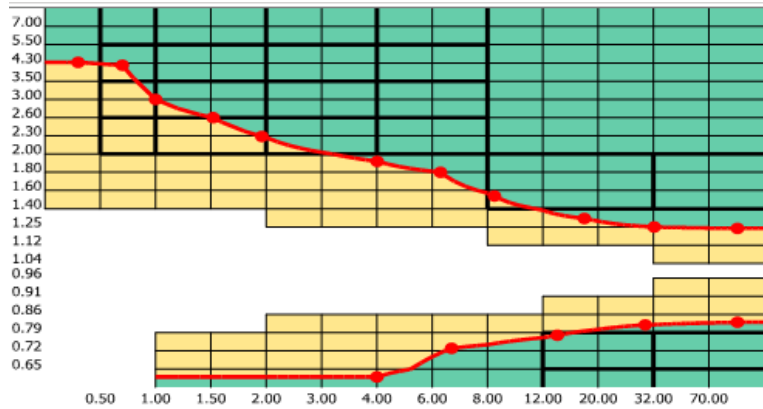
- Winding speed: 1300
- Amount of winding positions: 30

Basis for calculation Ne 40:

- Winding speed: 1100
- Amount of winding positions: 38

8. Enclosures / settings

NSLT

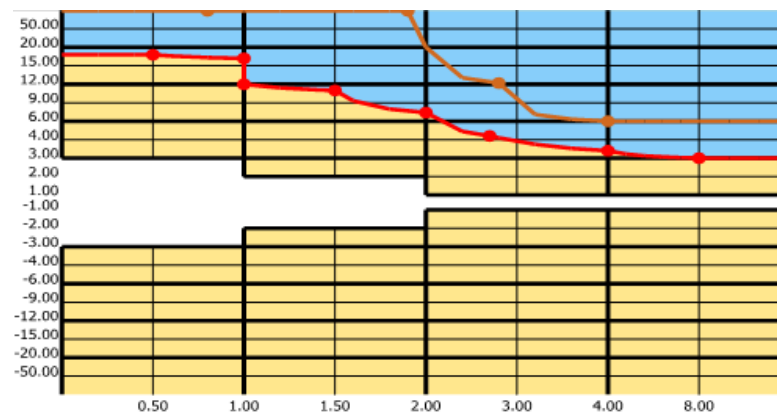


Class settings

| | | | | | | | |
|------|-----|---|---|---|---|-----|---|
| 7.00 | c | c | c | c | c | ccc | c |
| 5.00 | c | c | c | c | c | ccc | c |
| 3.90 | c | c | c | c | c | ccc | c |
| 3.20 | - | c | c | c | c | ccc | c |
| 2.70 | - | - | c | c | c | ccc | c |
| 2.30 | - | - | - | c | c | ccc | c |
| 2.10 | - | - | - | - | c | ccc | c |
| 1.80 | - | - | - | - | - | ccc | c |
| 1.60 | --- | c | c | c | c | c | c |
| 1.45 | --- | - | c | c | c | c | c |
| 1.30 | --- | - | - | c | c | c | c |
| 1.20 | --- | - | - | - | c | c | c |
| 0.83 | --- | - | - | - | - | c | c |
| 0.80 | --- | - | - | - | - | - | c |
| 0.75 | --- | - | - | - | - | - | - |
| 0.65 | ccc | c | c | c | c | c | c |

.5 1 2 4 8 32 cm

Foreign fibers

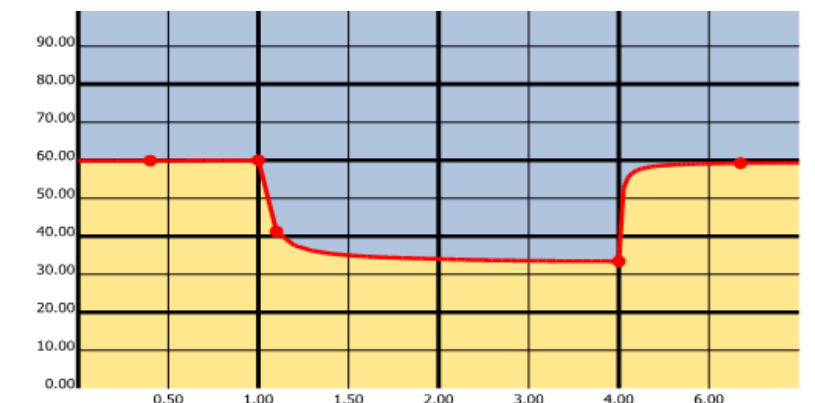


F settings

| | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 9.0 | c | c | c | c | c | c | c |
| 6.0 | c | c | c | c | c | c | c |
| 4.0 | - | c | c | c | c | c | c |
| 3.0 | - | - | c | c | c | c | c |
| 2.0 | - | - | - | c | c | c | c |
| 1.5 | - | - | - | - | c | c | c |
| 1.0 | - | - | - | - | - | c | c |
| 0.7 | - | - | - | - | - | - | c |

1 2 4 cm

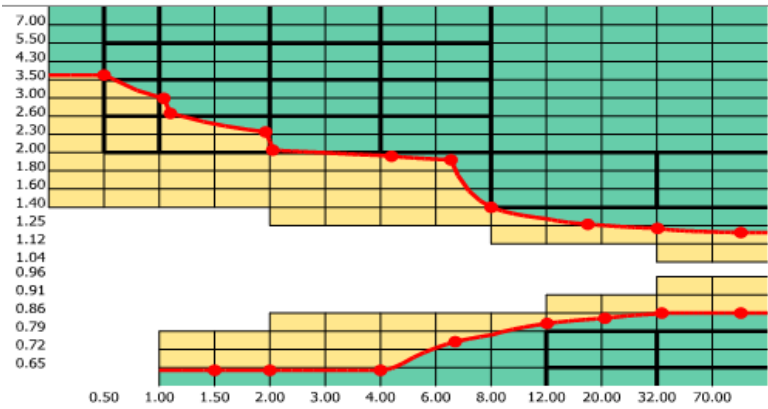
Polyprop



| | | |
|---------|----------|-----|
| P-Limit | P-Sensor | 4.0 |
| Length | [cm] | 6.0 |
| Rep | | 2 |

8. Enclosures / settings

NSLT

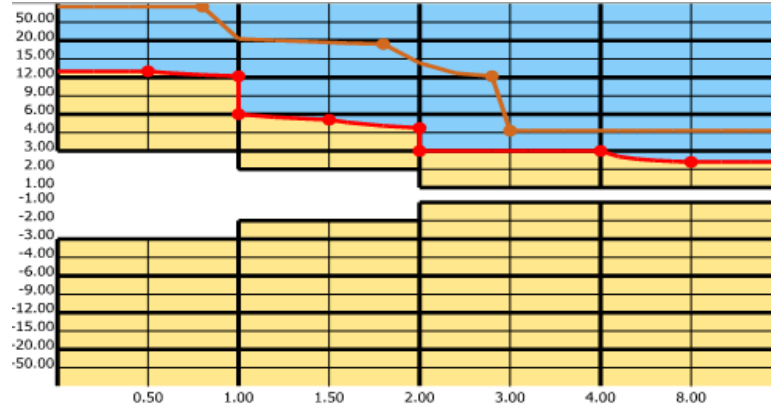


Class settings

| | |
|------|-------------------|
| 7.00 | c c c c c c ccc c |
| 5.00 | c c c c c c ccc c |
| 3.90 | c c c c c c ccc c |
| 3.20 | - c c c c c ccc c |
| 2.70 | - c c c c c ccc c |
| 2.30 | - c c c c ccc c |
| 2.10 | - c c c c ccc c |
| 1.80 | - c c ccc c |
| 1.60 | --- c c c c c c c |
| 1.45 | --- c c c c c c |
| 1.30 | --- c c c c c c |
| 1.20 | --- c c c c c c |
| 0.83 | --- c c c c c c |
| 0.80 | --- c c c c c c |
| 0.75 | --- c c c c c c |
| 0.65 | ccc c c c c c c |

.5 1 2 4 8 32 cm

Foreign fibers

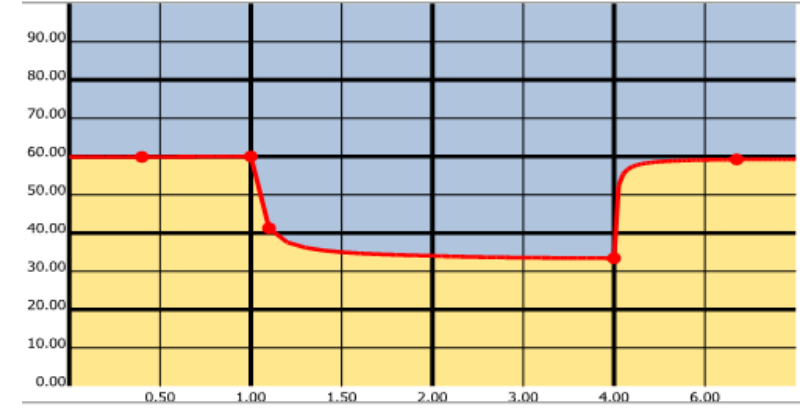


F settings

| | |
|-----|-------------------|
| 9.0 | c c c c c c c c |
| 6.0 | c c c c c c c c |
| 4.0 | - c c c c c c c c |
| 3.0 | - c c c c c c c c |
| 2.0 | - c c c c c c c c |
| 1.5 | - c c c c c c c c |
| 1.0 | - c c c c c c c c |
| 0.7 | - c c c c c c c c |

1 2 4 cm

Polyprop



| | | |
|---------|------|-----|
| P-Limit | | 4.0 |
| Length | [cm] | 6.0 |
| Rep | | 2 |