Pressure situation in low temperature network with a third distribution pipe

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3rd International Conference on
Smart Energy Systems and 4th Generation District Heating
Copenhagen, 12-13 September 2017
Outline

• Terminology
• Previous work
• Research questions
• Preliminary results
• Conclusions
Terminology

• 4GDH-2P (two pipes) one return pipe (common)

• 4GDH-3P (three pipes) two return pipes (delivery and recirculation)

• Temperature contamination

• Temperature degradation

• Displacements (0-4)
Previous work – Case area network
Previous work – Minimum flow recirculation pipe
Previous work – Temperature situation
Research questions

• Pressure situation at design conditions (total and specific)?

  How narrow can recirculation flow pipes be?

• How does heat transfer rate for different pipe configurations compare?
Preliminary results – Pressure total
Preliminary results – Pressure specific

![Graph showing pressure variation with number of network sections](image)

- 4
- 3
- 2
- 1
- 0

Ps/m

No. of network sections

0 5 10 15 20 25 30 35

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Preliminary results – Temperature levels

DN65 - Series 3

- 3

35
54

3

20
50
54

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Preliminary results – Heat transfer rate (Series 3)
Conclusions

• Recirculation pipe can be 2 or 3 standard DN pipe sizes smaller

• Heat transfer rates for triple pipes with 2-3 displacements appears to be equivalent to that of ordinary twin pipes
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