

# CONDITION ASSESSMENT BEFORE REHABILITATION



1

# CONDITION ASSESSMENT BEFORE REHABILITATION

## SLIP LINING – THE SIMPLEST

Gap between liner and cracked host forms a water path

Must fill gap with grout to prevent cavities forming through soil

Significant loss in capacity - 77% diameter means 50% capacity

61

PIPES SARF ROAD DRAINAGE COURSE JULY 2022

## SLIPLINING WITH HDPE PIPE

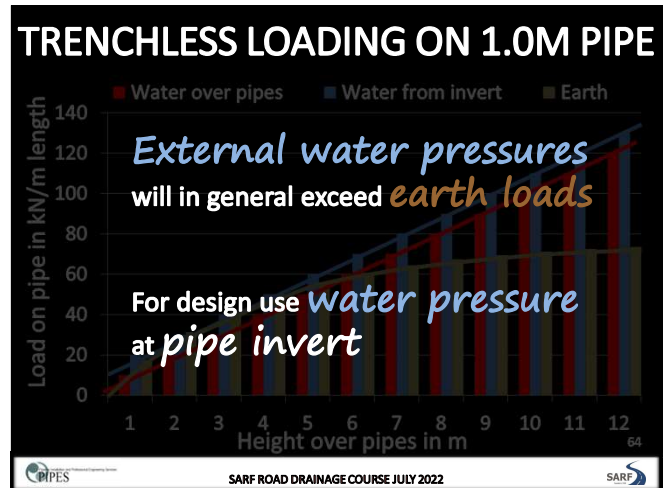
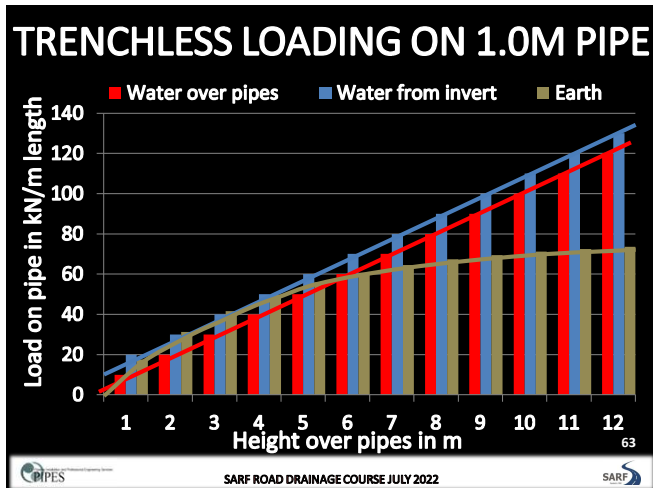
Entry pit

Exit pit

Other techniques such as Cured in Place Pipe, swage lining, spirally wound and fold & form

62

PIPES SARF ROAD DRAINAGE COURSE JULY 2022



## IN THE DEVELOPED COUNTRIES

With existing pipelines problems generally related to the requirements of strength, water tightness or durability

Close or tight fit solutions

- Cured-in-place pipe
- Fold and form
- Swage lining are used

65

PIPES SARF ROAD DRAINAGE COURSE JULY 2022

## CURED IN PLACE PIPE

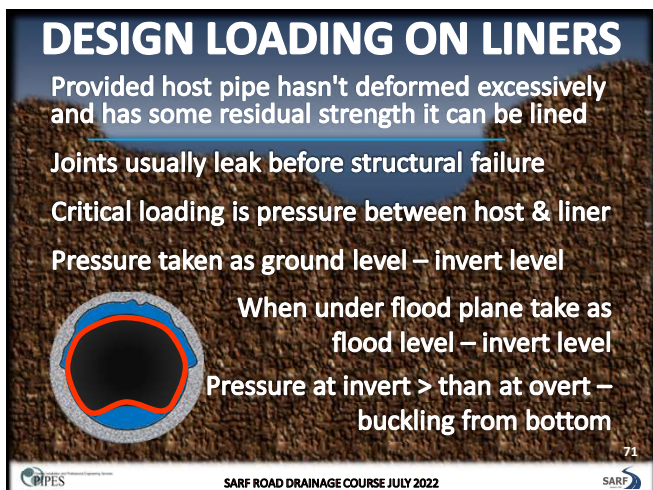
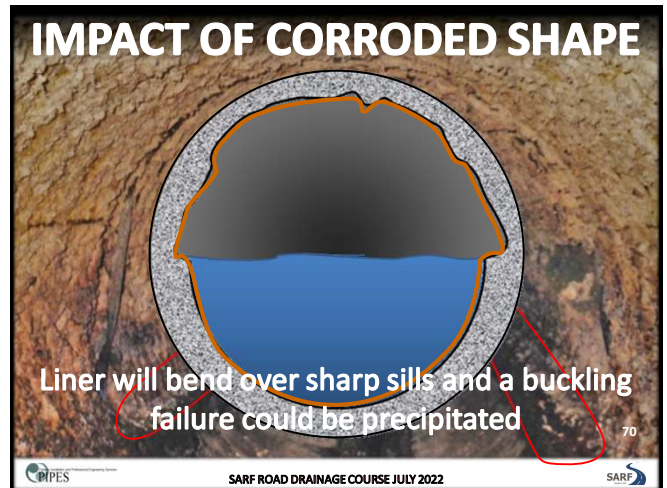
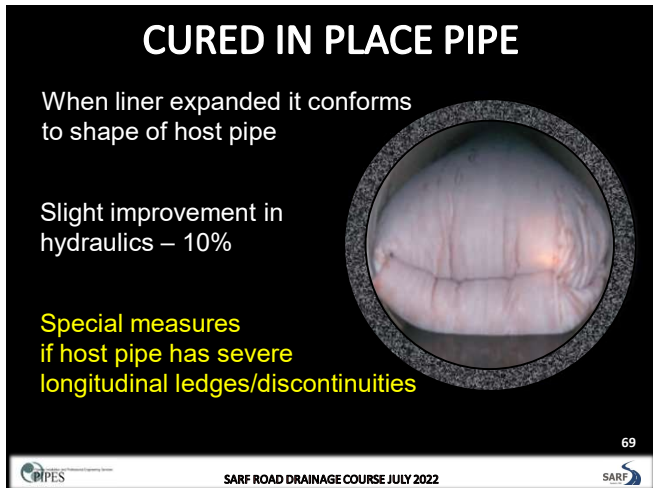
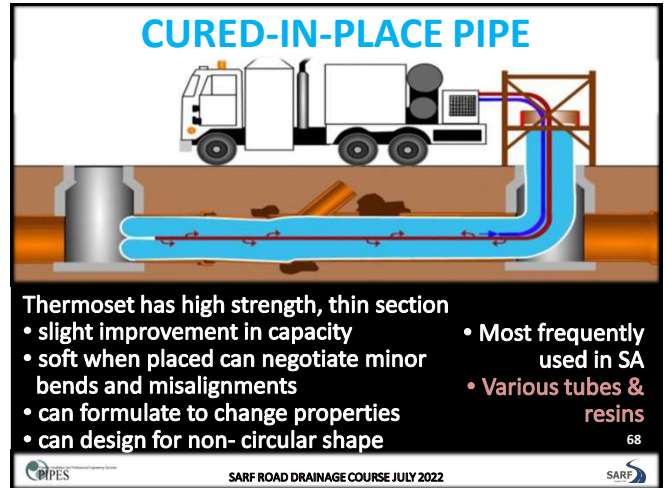
66

PIPES SARF ROAD DRAINAGE COURSE JULY 2022

2



# CONDITION ASSESSMENT BEFORE REHABILITATION



3

# CONDITION ASSESSMENT BEFORE REHABILITATION

## SPIRALLY WOUND LINING

Profile wound round mandrel in manhole

Or device travels along pipeline

Ideal for sewer rehabilitation where corrosion not uniform

- the liner maintains circular shape
- space between liner & host pipe grouted
- minimal impact on capacity

SARF ROAD DRAINAGE COURSE JULY 2022

## SPIRALLY WOUND SYSTEMS

Been used in SA:  
Opportunity for rehab of large diameter CMP where access difficult

Several variations :

- Use either PVC or PE profiled section
- PE sections can be steel reinforced
- Not restricted by host pipe shape

SARF ROAD DRAINAGE COURSE JULY 2022

## FOLD AND FORM PE/PVC LINER

- Folded & strapped
- Pulled into host
- Expanded in place
- May reduce capacity
- Needs entry pit
- May need grouting in host

Seldom used in SA

SARF ROAD DRAINAGE COURSE JULY 2022

Linings are effective for renovating pipelines so that they can meet the secondary requirements of water tightness, strength and durability.

Linings are not always effective in ensuring that pipelines can meet the primary function of conveying sufficient water.

SARF ROAD DRAINAGE COURSE JULY 2022

## PIPE BURSTING SYSTEMS

Unique - online replacement & upsizing

Generally more cost effective than open cut

Virtually no spoil

Minimum surface disruption

Minimal chance of damage to other services

Most used of pipe rehabilitation techniques in South Africa

SARF ROAD DRAINAGE COURSE JULY 2022

## STATIC PIPE BURSTING

Static - bursting head followed by new pipe pulled through old pipeline.

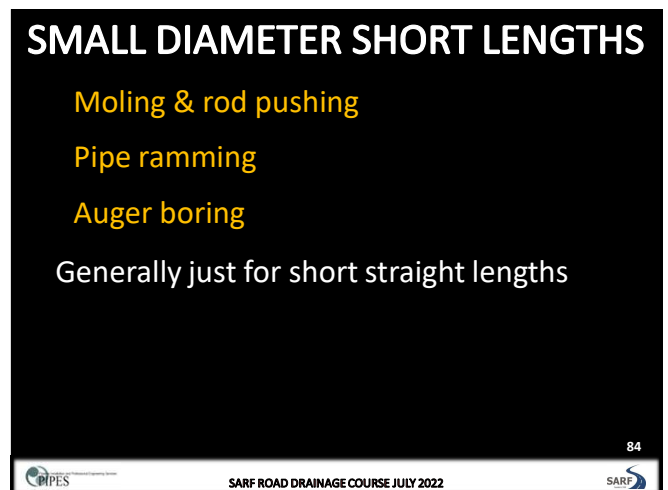
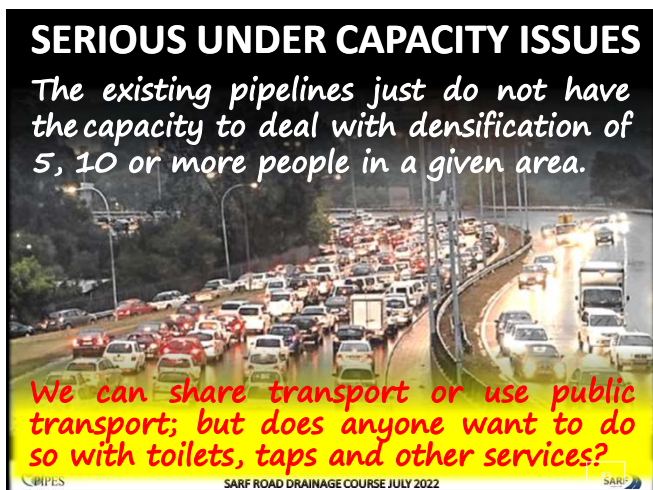
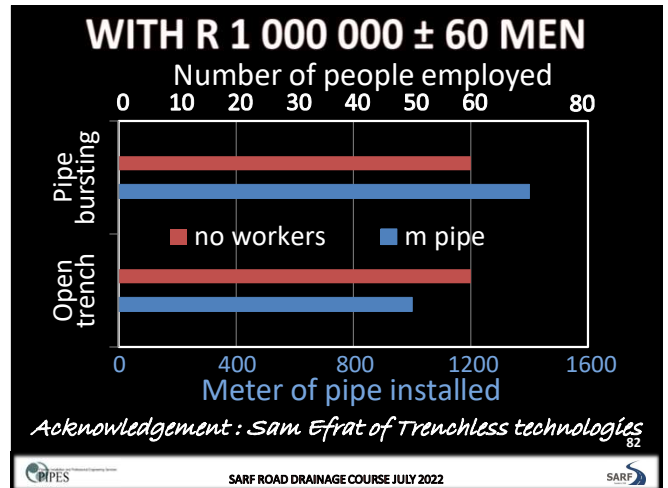
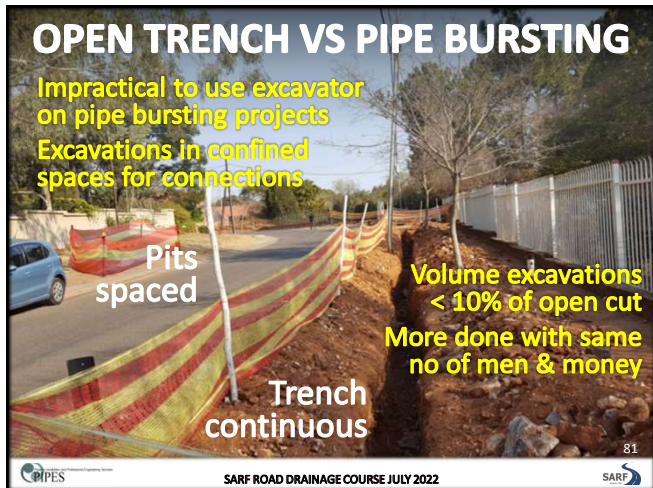
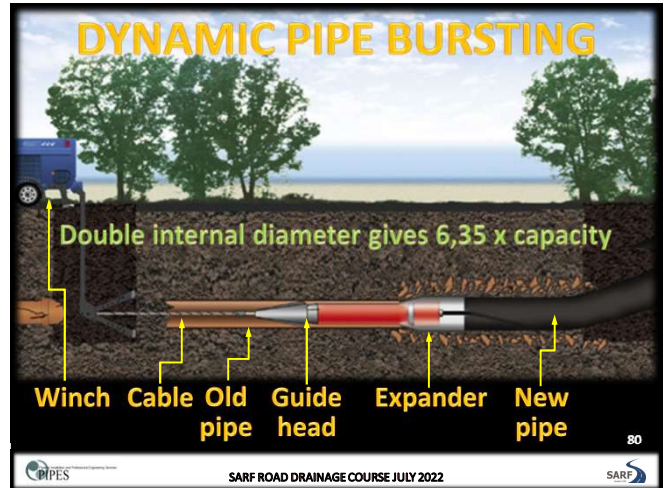
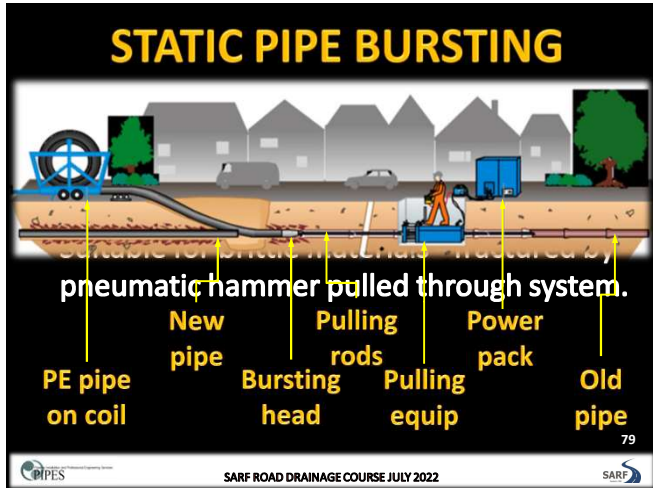
Suitable for brittle materials - fractured by pneumatic hammer pulled through system.

SARF ROAD DRAINAGE COURSE JULY 2022

4

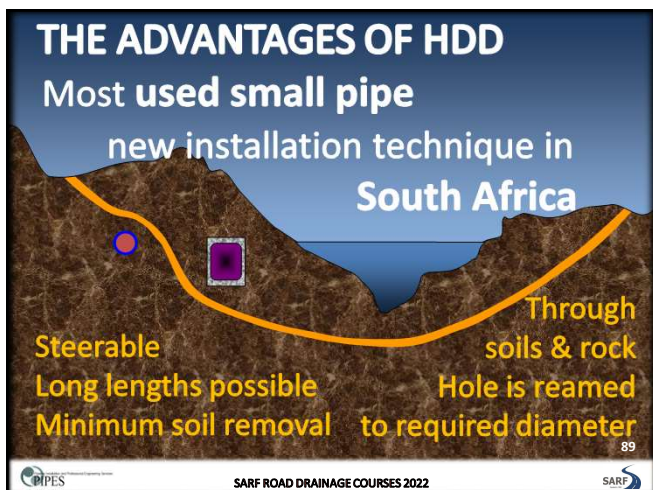
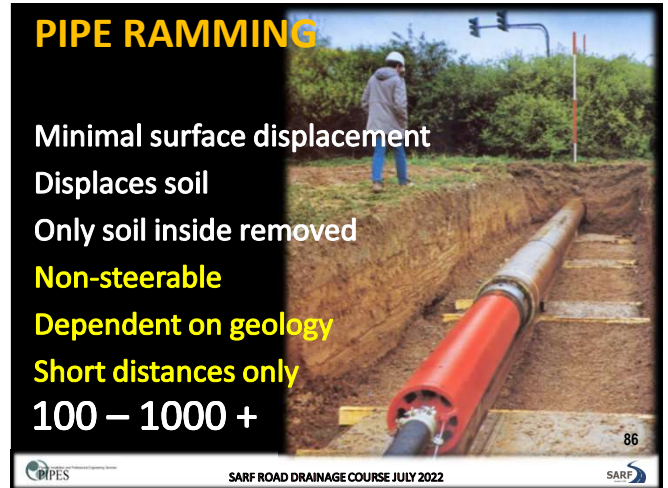
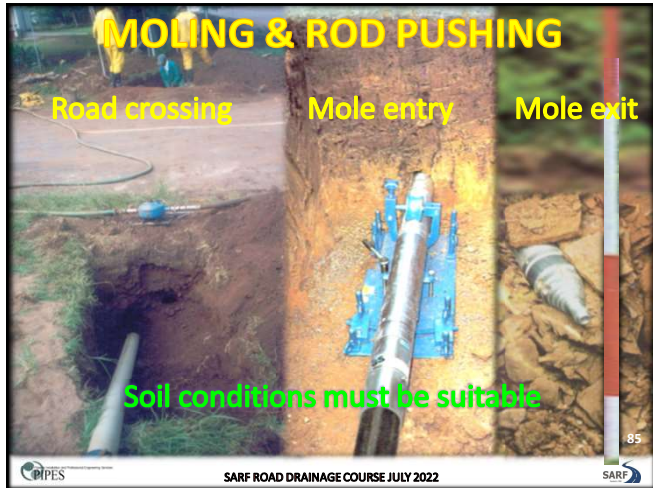


# CONDITION ASSESSMENT BEFORE REHABILITATION





# CONDITION ASSESSMENT BEFORE REHABILITATION



6