Test samples for the Approval fo Welding Procedures for Pipes < DN65

P. Steinhoff, 2020

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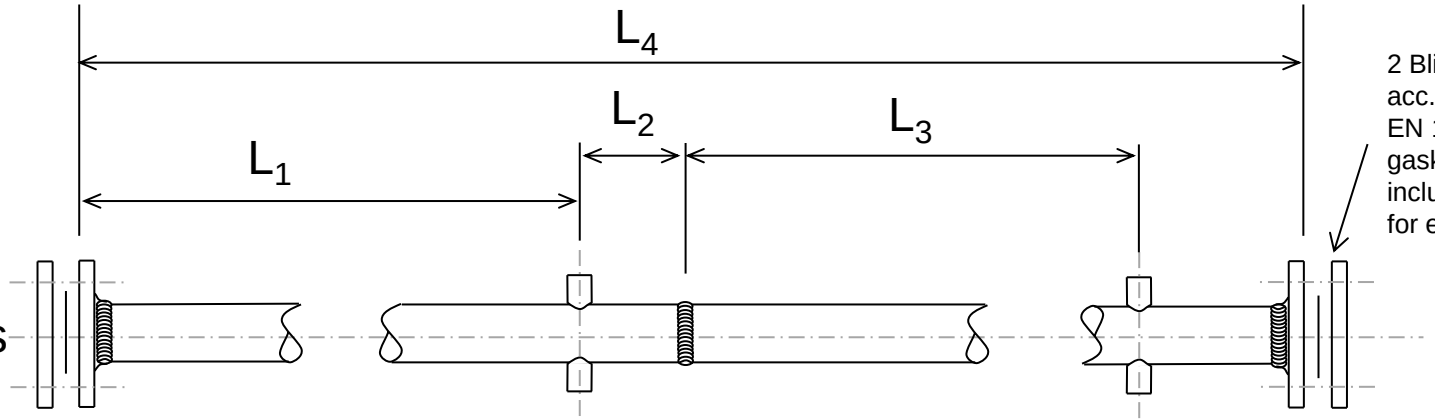
- Welding procedure for pipe connections
- Sleeve welding procedure for installation of nozzles and sprinklers – threaded sleeves
- Sleeve welding procedure (with options for pipe network contruction) – threaded sleeves
- Welding procedure for branch pipes / grooved sleeves

Welding procedure for pipe connections – Extent

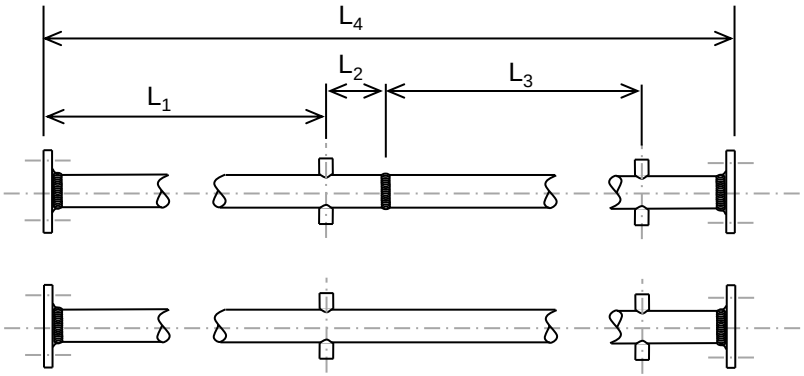
- Welding procedure for pipe connections
  - Selection of the smallest, the largest and a middle-sized pipe dimension as extent of the sampling
    - 1 pipe (without joint weld) per nominal size as refence for hydraulic tests – manufacturing according to sketch
    - 1 pipe (test specimen with joint weld) per nominal size for hydraulic tests and subsequent pressure test under bending stress – manufacturing according to sketch

Welding procedure for pipe connections –
Sketch for test pieces per nominal size:



Required test pieces	DN ?	DN ?	DN ?

Welding procedure for pipe connections – Dimensions of test pieces:

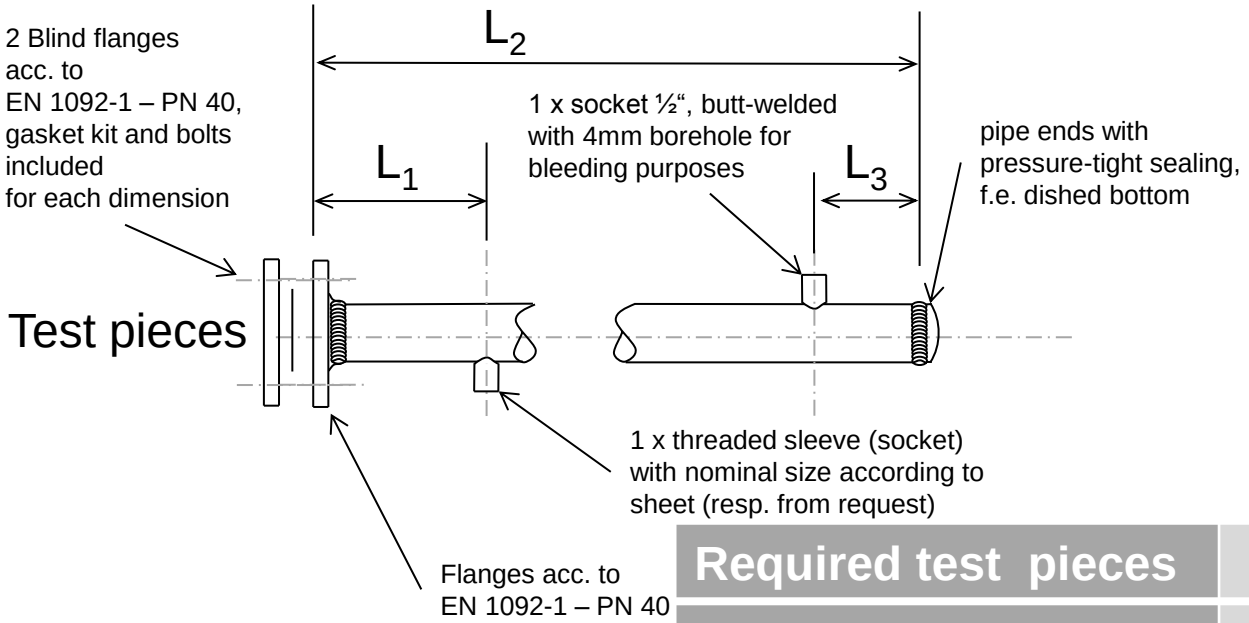


Nominal Size	L_1 in mm	L_2 in mm	L_3 in mm	L_4 in mm
DN 20	300	400	700	1600
DN 25	300	400	700	1600
DN 32	300	400	700	1600
DN 40	300	400	700	1600
DN 50	300	400	700	1600

Sleeve welding procedure for nozzle / sprinkler – threaded sleeves – Extent:

- Sleeve welding procedure (for nozzles and sprinklers only!)
  - Selection of the smallest, the largest and a middle-sized pipe dimension as extent of the sampling
    - 1 test piece per nominal size with the related smallest sleeve for hydraulic tests and subsequent pressure test – manufacturing according to sketch

Sleeve welding procedure for nozzle / sprinkler – test pieces per nominal size:



Nominal Size	L_1 [mm]	L_2 [mm]	L_3 [mm]
DN 20	800	1100	200
DN 25	800	1100	200
DN 32	800	1100	200
DN 40	800	1100	200
DN 50	800	1100	200

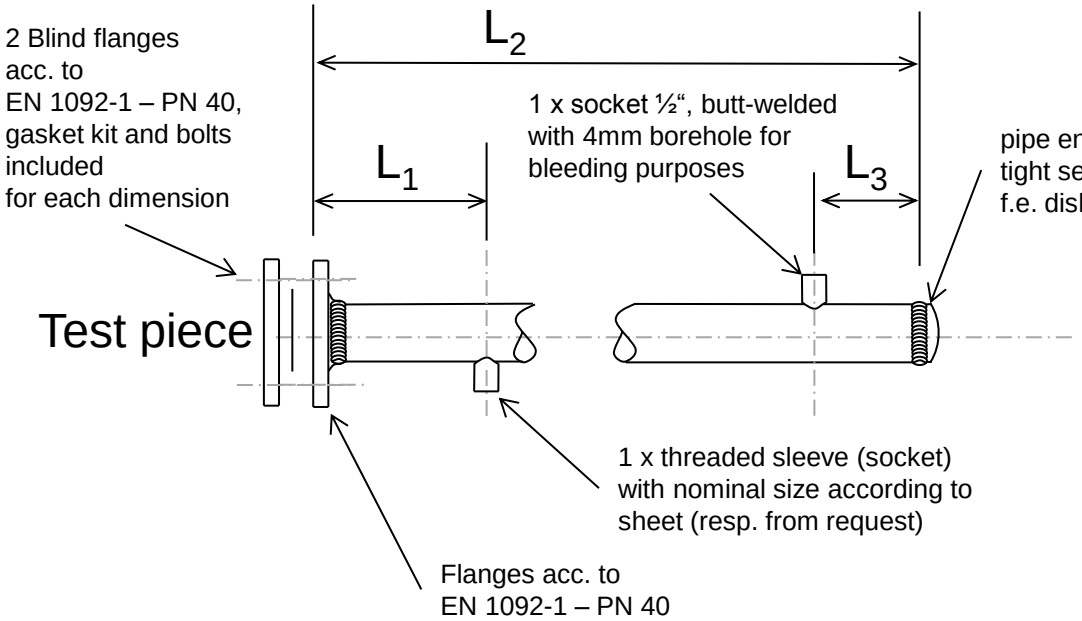
(Reference is from VdS)

Required test pieces			
nominal size pipe/ nominal size socket (sleeve)	DN ?/ DN ?	DN ?/ DN ?	DN ?/ DN ?

Sleeve welding procedure for pipe networks – threaded sleeves – Extent:

- Sleeve welding procedure (with option for pipe network construction)
  - Selection of the smallest, the largest and a middle-sized pipe dimension as extent of the sampling
    - 3 test pieces per pipes nominal size with the related smallest, largest and a middle-sized threaded sleeve (socket) for hydraulic tests – manufacturing according to sketch
    - 3 test pieces per pipes nominal size with the related smallest, largest and a middle-sized threaded sleeve (socket) for pressure test under bending stress – manufacturing according to sketch (equal nominal sizes as for hydraulic tests required!)

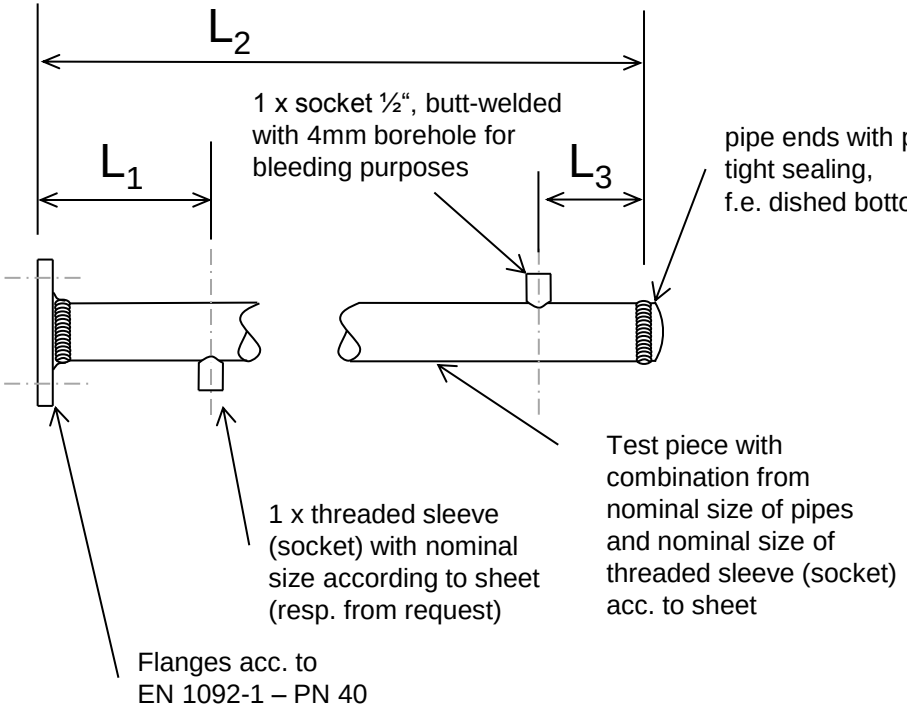
Sleeve welding procedure for pipe networks – threaded sleeves – hydraulic test: Sketch



Nominal Size	L_1 [mm]	L_2 [mm]	L_3 [mm]
DN 20	800	1100	200
DN 25	800	1100	200
DN 32	800	1100	200
DN 40	800	1100	200
DN 50	800	1100	200

(Reference pieces from VdS)

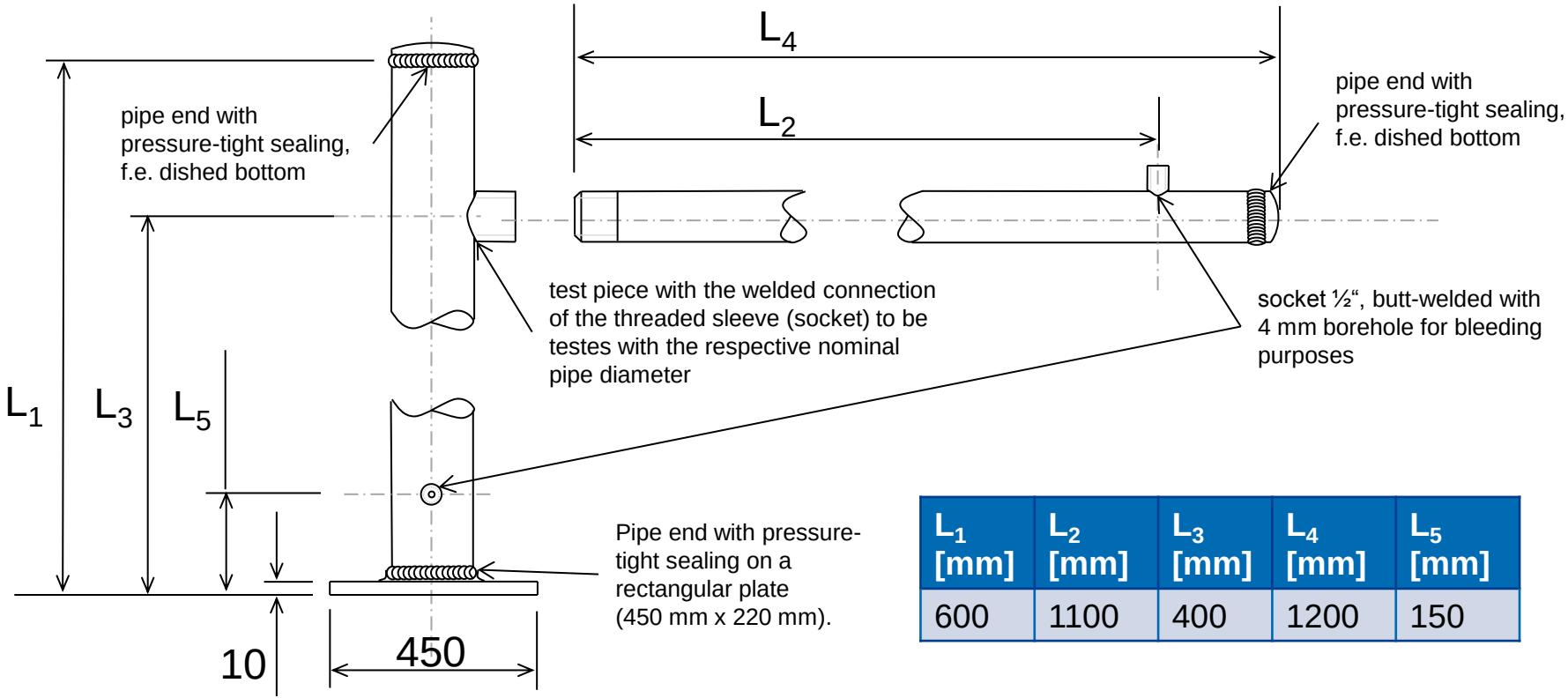
Sleeve welding procedure for pipe networks – threaded sleeves – hydraulic test:



Required test pieces:

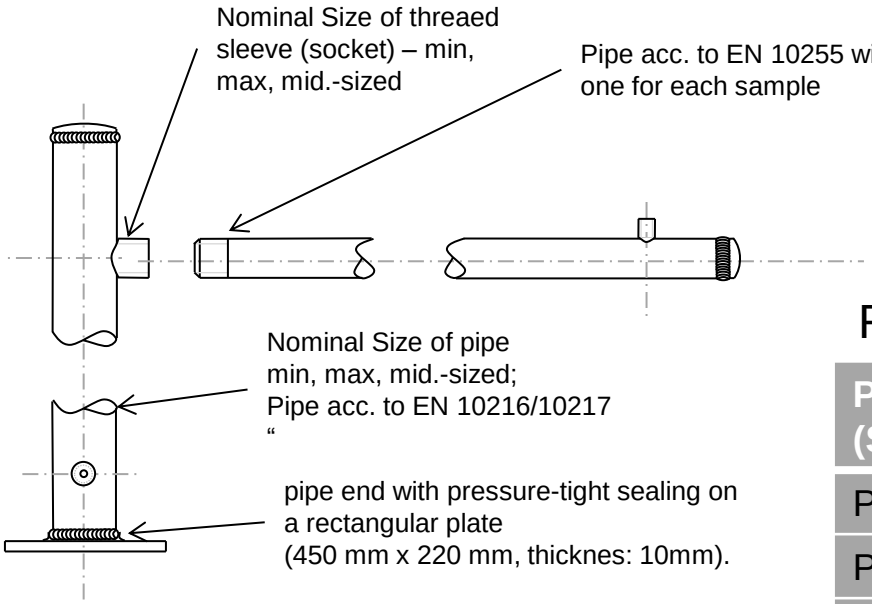
Pipe / Sleeve (Socket)	$Sleeve_{min}$	$Sleeve_{mid\text{-}sized}$	$Sleeve_{max}$
$Pipe_{min}$	___ / ___	___ / ___	___ / ___
$Pipe_{mid\text{-}sized}$	___ / ___	___ / ___	___ / ___
$Pipe_{max}$	___ / ___	___ / ___	___ / ___

Sleeve welding procedure for pipe networks – threaded sleeves – pressure test under bending: Sketch



L_1 [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	L_5 [mm]
600	1100	400	1200	150

Sleeve welding procedure for pipe networks – threaded sleeves – pressure test under bending:



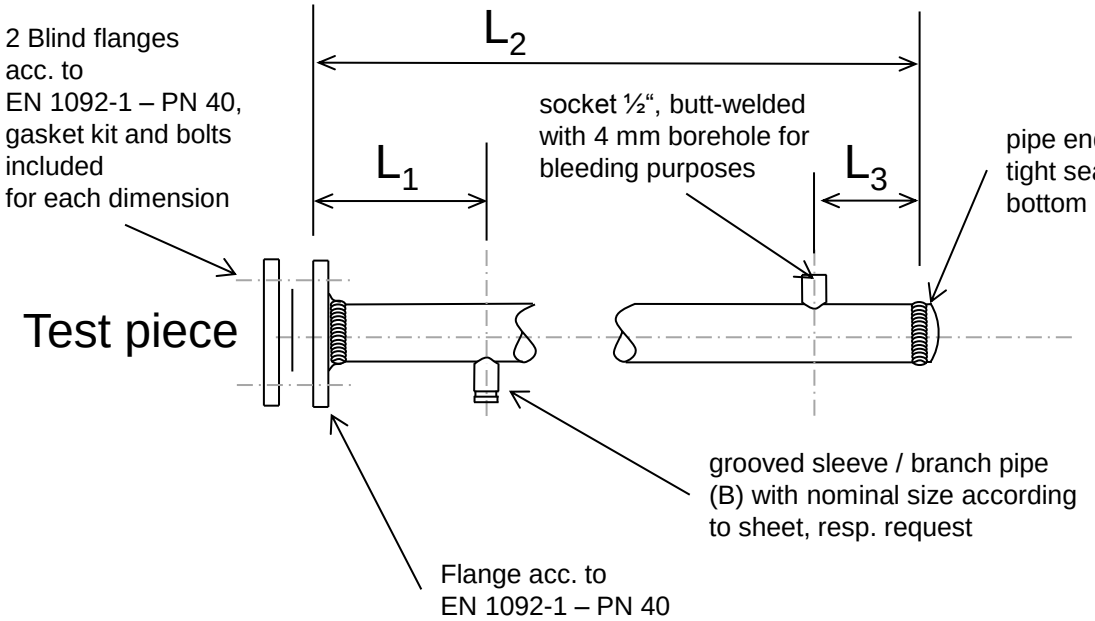
Required test pieces:

Pipe / Sleeve (Socket)	$Sleeve_{min}$	$Sleeve_{mid\text{-}sized}$	$Sleeve_{max}$
$Pipe_{min}$	___ / ___	___ / ___	___ / ___
$Pipe_{mid\text{-}sized}$	___ / ___	___ / ___	___ / ___
$Pipe_{max}$	___ / ___	___ / ___	___ / ___

Welding of branch pipes for pipe networks – Extent:

- Welding of branch pipes and grooved sleeves (aiming on pipe network construction)
  - Selection of the smallest, the largest and a middle-sized pipe dimension as extent of the sampling
    - 3 test pieces per pipes nominal size with the related smallest, largest and a middle-sized grooved sleeve (branch) for hydraulic tests – manufacturing according to sketch
    - 3 test pieces per pipes nominal size with the related smallest, largest and a middle-sized grooved sleeve (branch) for pressure test under bending stress – manufacturing according to sketch (equal nominal sizes as for hydraulic tests required!)

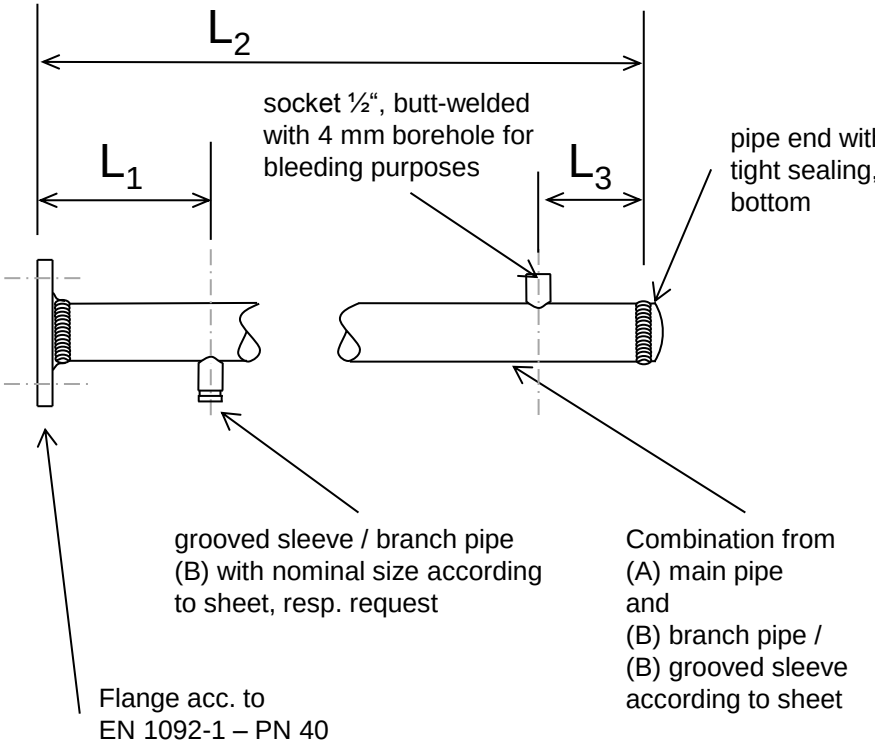
Welding of branch pipes for pipe networks – grooved sleeves / branch pipes – hydraulic test: Sketch



Nominal Size	L_1 [mm]	L_2 [mm]	L_3 [mm]
DN 20	800	1100	200
DN 25	800	1100	200
DN 32	800	1100	200
DN 40	800	1100	200
DN 50	800	1100	200

(Reference pieces from VdS)

Welding of branch pipes for pipe networks – grooved sleeves / branch pipes – hydraulic test:

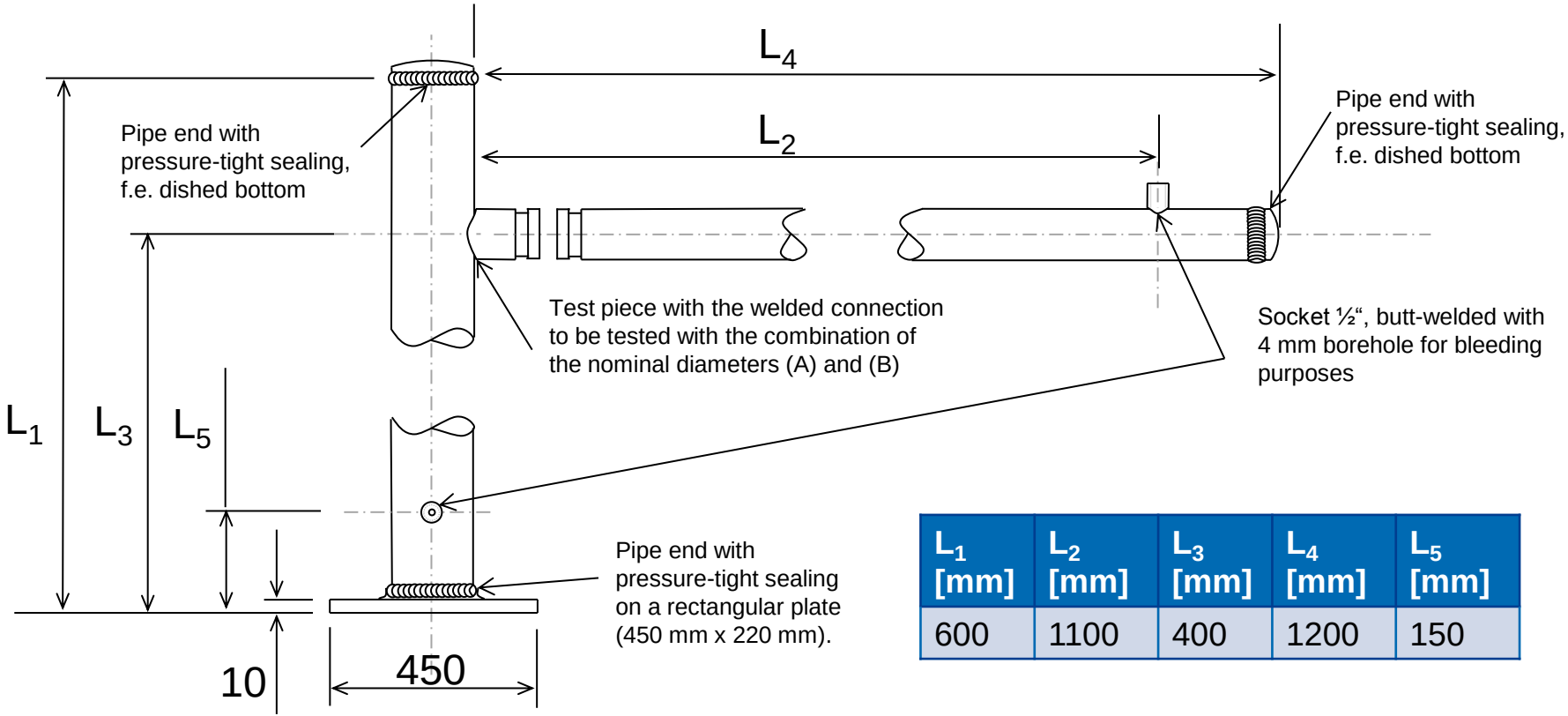


Required test pieces:

Pipe (A) / Branch Pipe (B)	$Pipe_{B,min}$	$Pipe_{B,mid-sized}$	$Pipe_{B,max}$
$Pipe_{A,min}$	___ / ___	___ / ___	___ / ___
$Pipe_{A,mid-sized}$	___ / ___	___ / ___	___ / ___
$Pipe_{A,max}$	___ / ___	___ / ___	___ / ___

Welding of branch pipes for pipe networks

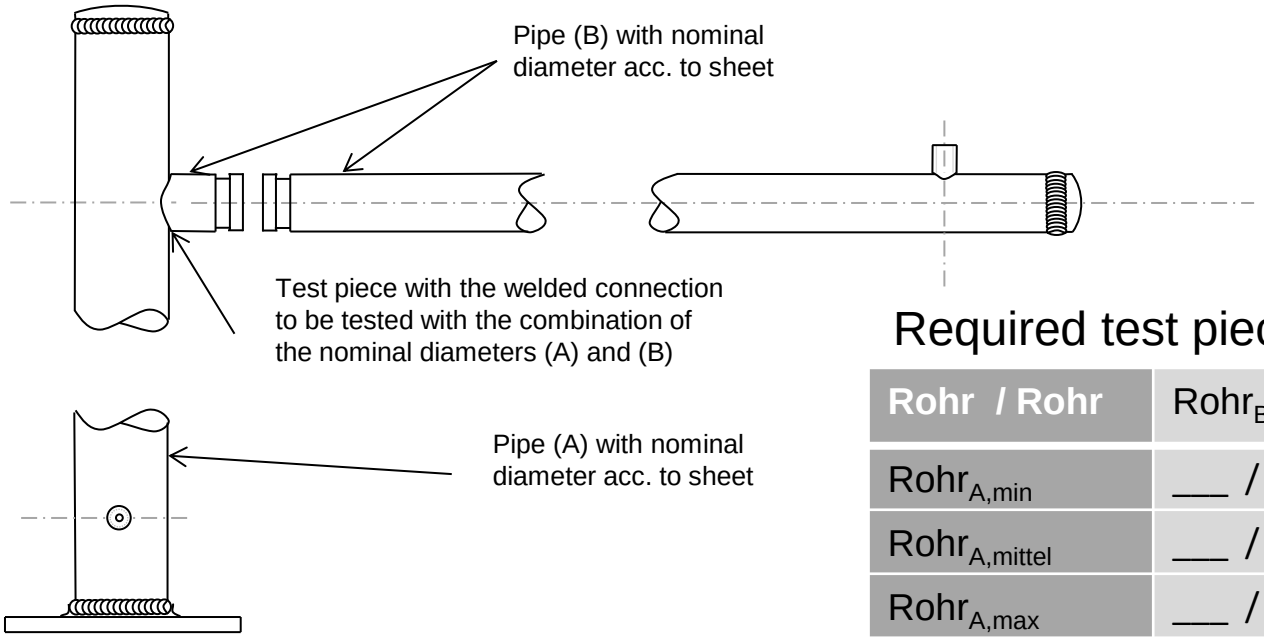
– grooved sleeves / branch pipes – pressure test under bending stress Option A:



L_1 [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	L_5 [mm]
600	1100	400	1200	150

Welding of branch pipes for pipe networks

– grooved sleeves / branch pipes – pressure test under bending stress Option A:

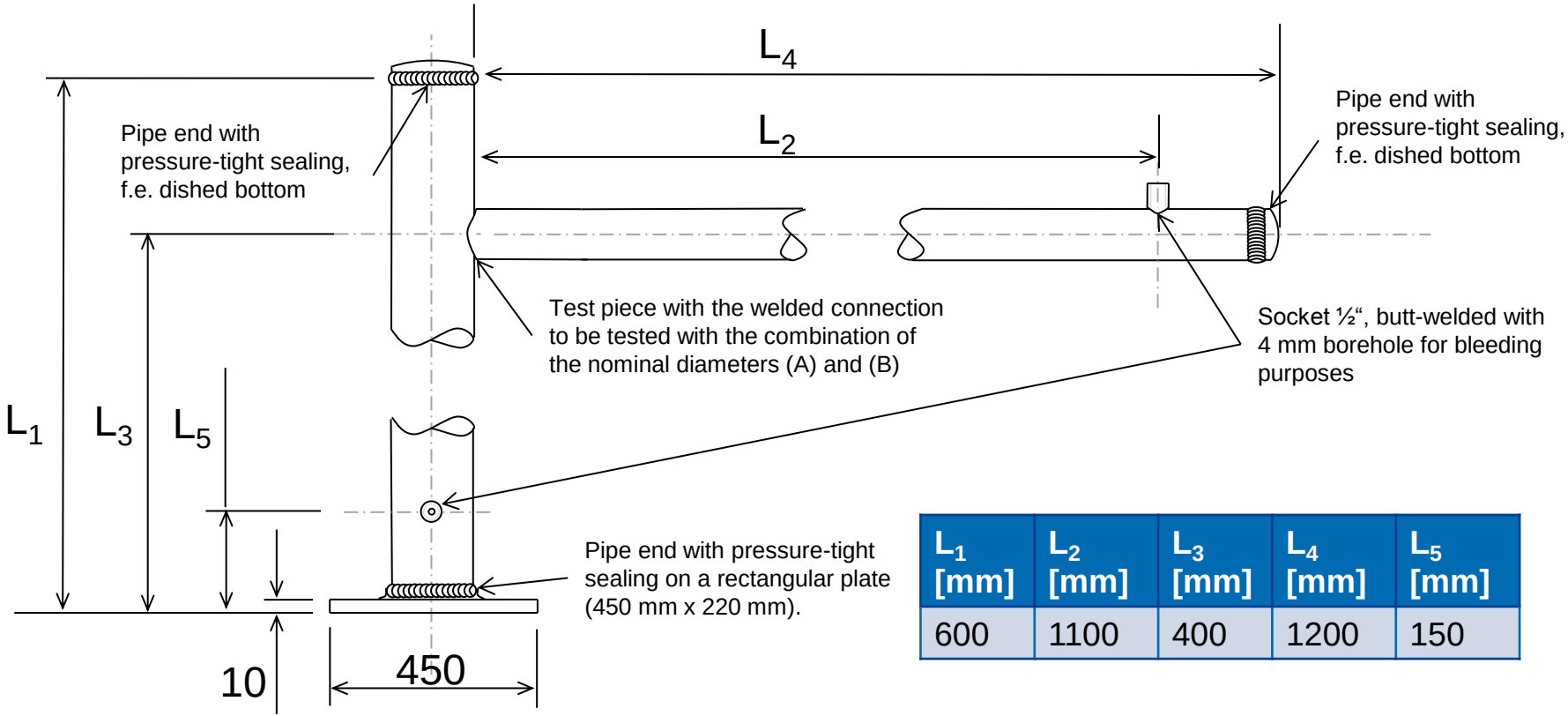


Required test pieces:

Rohr / Rohr	$Rohr_{B,min}$	$Rohr_{B,mittel}$	$Rohr_{B,max}$
$Rohr_{A,min}$	___ / ___	___ / ___	___ / ___
$Rohr_{A,mittel}$	___ / ___	___ / ___	___ / ___
$Rohr_{A,max}$	___ / ___	___ / ___	___ / ___

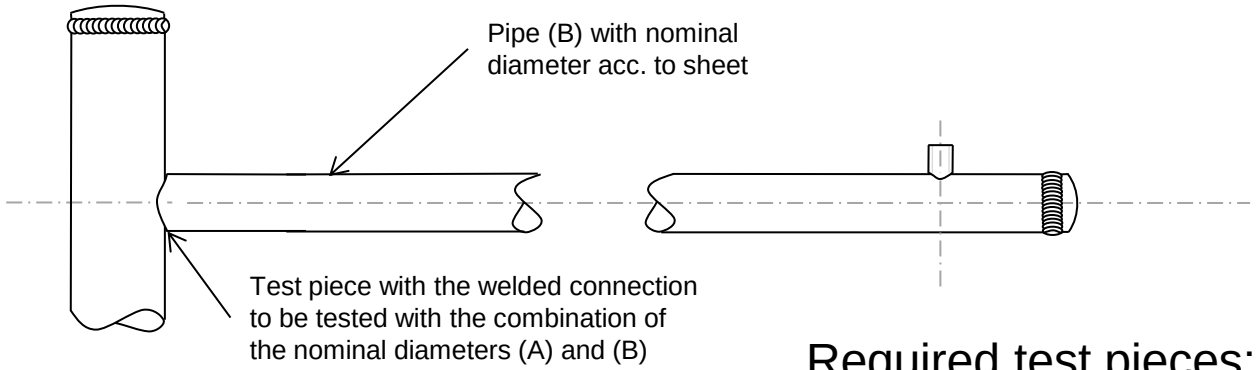
Welding of branch pipes for pipe networks

– grooved sleeves / branch pipes – pressure test under bending stress Option B:



L_1 [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	L_5 [mm]
600	1100	400	1200	150

Welding of branch pipes for pipe networks
– grooved sleeves / branch pipes – pressure test under bending stress Option B:



Required test pieces:

Pipe (A) / Branch Pipe (B)	$Pipe_{B,min}$	$Pipe_{B,mid-sized}$	$Pipe_{B,max}$
$Pipe_{A,min}$	___ / ___	___ / ___	___ / ___
$Pipe_{A,mid-sized}$	___ / ___	___ / ___	___ / ___
$Pipe_{A,max}$	___ / ___	___ / ___	___ / ___