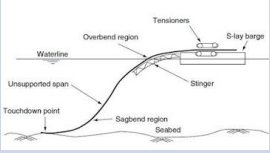
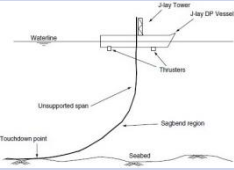
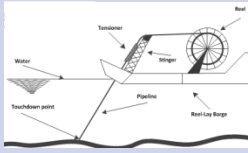
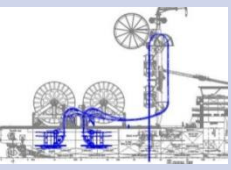
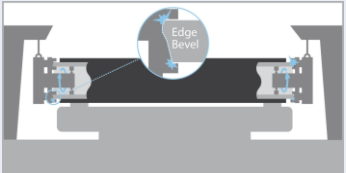
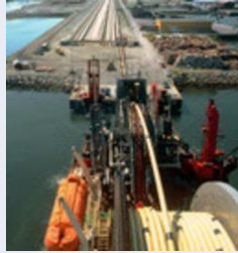


	S-lay	J-lay	Reel lay	Flexible lay	Construction
Key Parameters	 Shallow to Deep water WD max (standard): 600m WD max (steep): 2000m Pipe dia. max: 42" to 60" Pipe type: rigid joint 	 Ultra deep water WD min: 150m Pipe dia.: max 32" Pipe type: rigid joint	 Deep water WD max: 2500m Pipe dia.: max 18" Pipe type: rigid pipe / turret	 Ultra deep water WD max: 3000m Pipe dia.: max 20" Pipe type: Flexible / turret	   
Key equipment	Firing line (welding stations) NDT, X-ray  FJC  Tensioners  Stinger 	Tower & pipe elevator Welding station NDT, X-ray FJC  Tensioners  Hang-off platform 	Reel Stinger / tower Straightener  Tensioner 	Reel Stinger / tower Tensioner 	MPV vessels are generally equipped with: Offshore crane with: AHC (150T- 250T) 2 work ROVs   A&R winch 
Examples & key contractors	Allseas Audacia  Mc Dermott / Cnooc / Sapura	Heerema Balder  Saipem	Technip Deep Blue  Subsea 7 / Emas	Seven Waves  Technip / Emas / Sapura	Bourbon Evolution  Maersk / Deep Ocean
Preparation and storage	Pipe joint storage 	Pipe joint beveling 		Transpooling 	Heavy lift vessels Maximum lifting capacity: 14200t  
Pros & Cons	•Allows laying of concrete coated pipe •Long stinger required for deep water •Residual pipe strain • Classical FLET, ILT cannot be installed	•No residual pipe strain •FLET and ILT can be integrated •Low production rate	•High pipe-lay rate. •High quality (onshore) welds and control & special pipe •Dedicated spool base required •Pipe is plastically bend.	•High pipe-lay rate. • No welds • Easy transpooling •Limited diameter	Saipem Heerema Cnooc