

MELLÉKLET

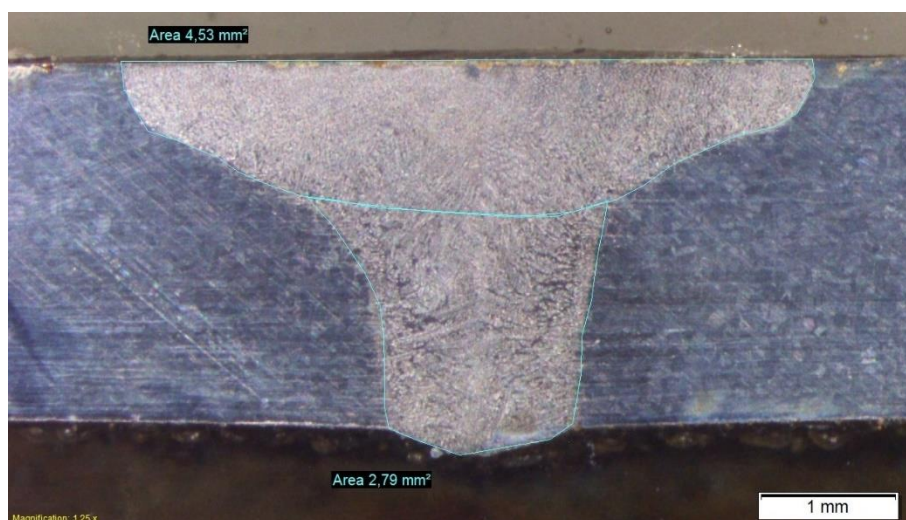
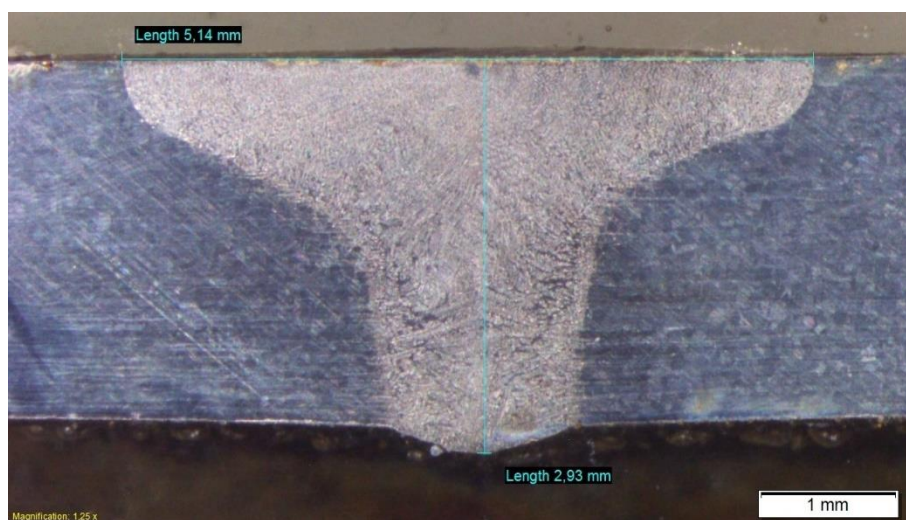
Jelen mellékletben a hegesztési varratok számozása a következőképpen történik: az első szám vonatkozik a kísérletsorozat számára, azaz a haladási sebességre, a második szám a leadott lézerteljesítményt jelöli, a harmadik szám pedig arra utal, hogy a varrat a félbevágott csőnek melyik oldalán található (az 1-es jelöli azt a keresztmetszetet, amit korábban, a 2-es pedig azt, amelyiket később hegesztettem).

Példa: 1.100.1. első kísérletsorozatba tartozó, tehát 24 cm/min haladási sebesség mellett készített varrat, 100%-os leadott lézerteljesítmény, a félbevágott csőnek azon a keresztmetszetén található, amit előbb hegesztettem.

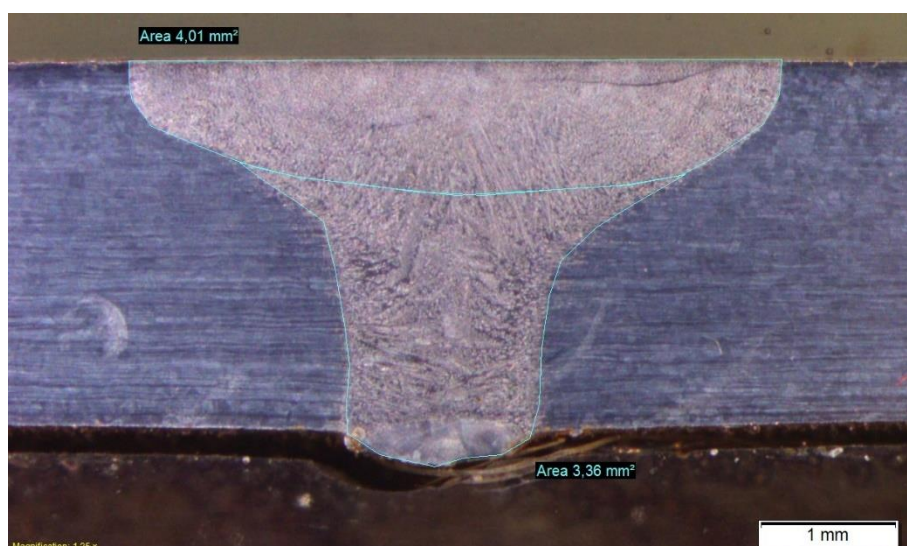
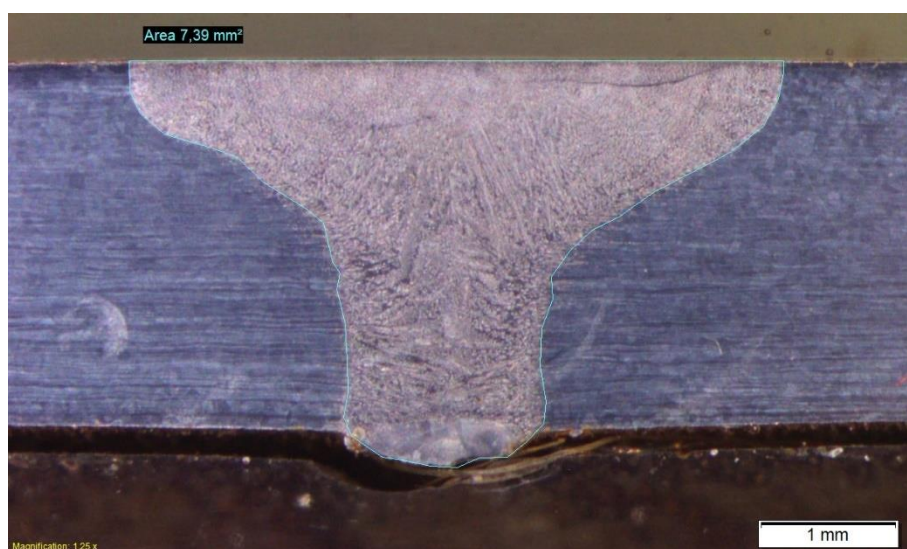
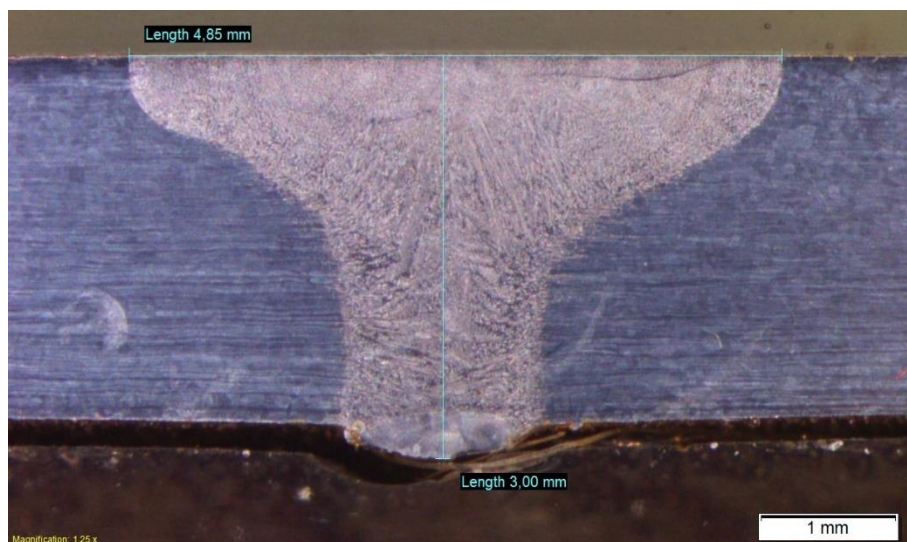
Minden varrat esetén az első képen a varratszélesség és beolvadási mélység, a második képen a varratterület, a harmadik képen pedig a hővezetési és mélyvarratos rész területének méretezése szerepel.

Mivel az első kísérletsorozat esetén a 20%-os teljesítményszinten – a 1.20.1. és a 1.20.2. jelű varratok esetén – tisztán hővezetési hegesztés esete áll fenn, ezeknél a varratoknál nem értelmezhető külön-külön a hővezetési és mélyvarratos rész területe, emiatt nem is készült ilyen fénykép.

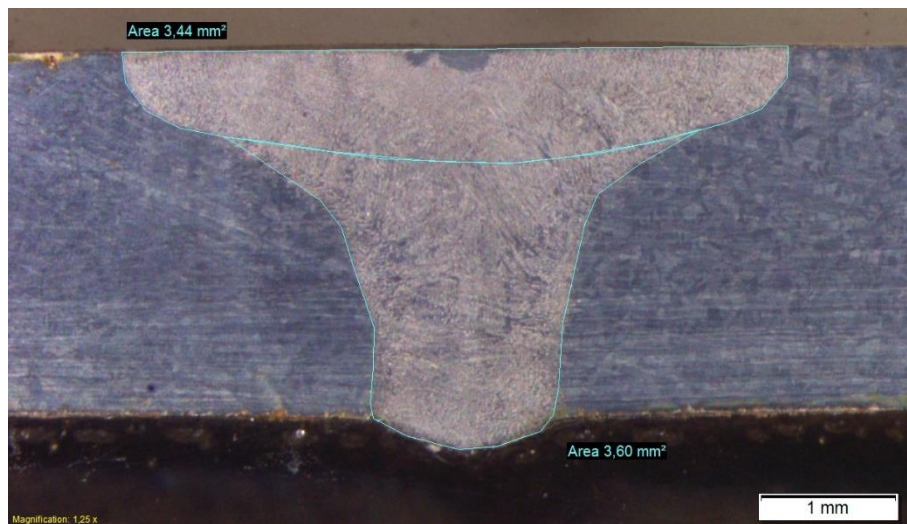
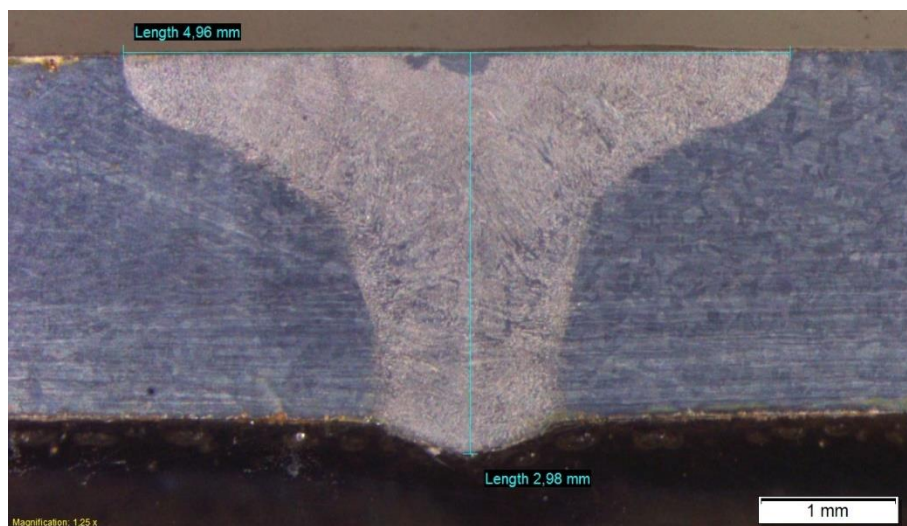
Az első kísérletsorozat ($v=24$ cm/min) mikroszkópi képei:



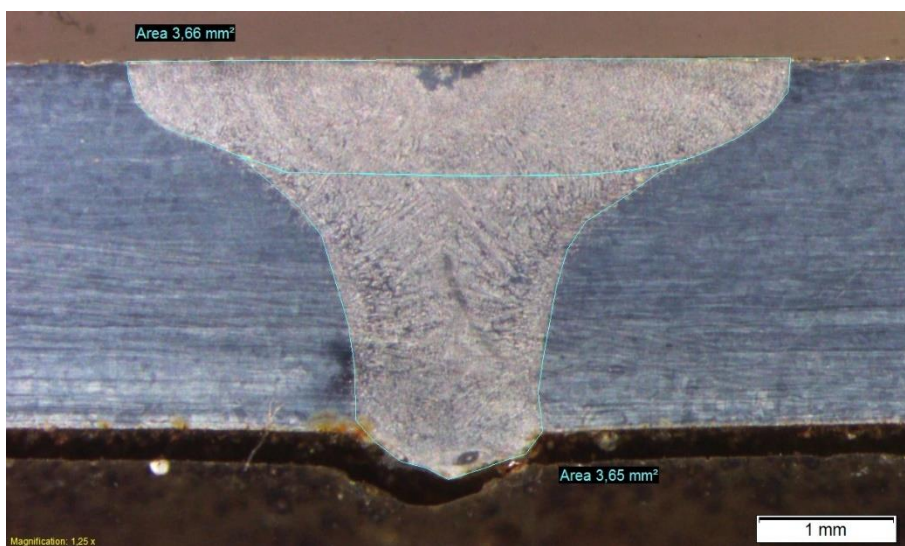
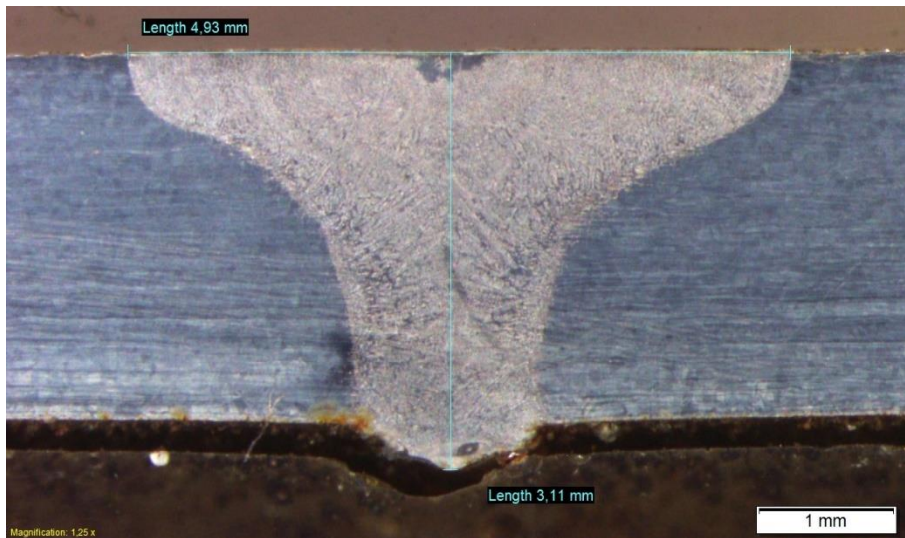
1.100.1.



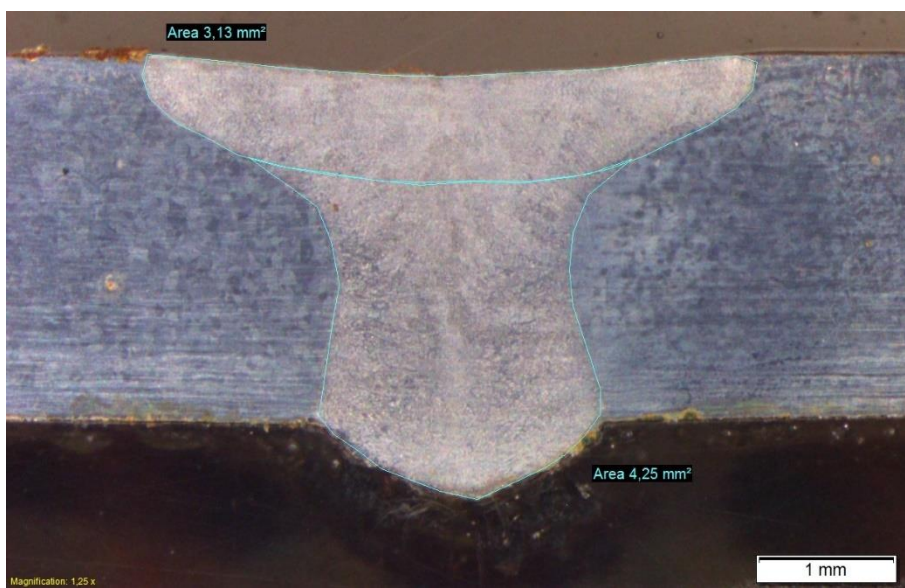
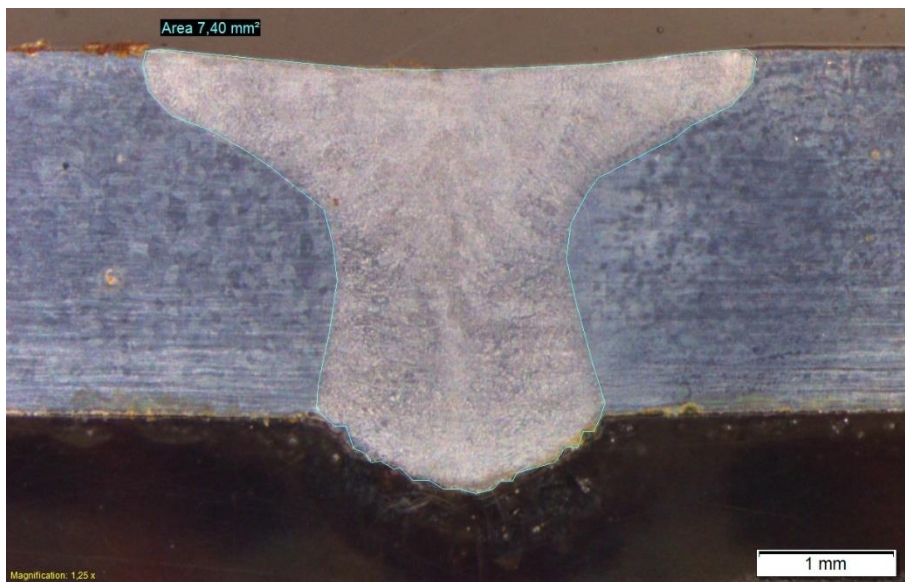
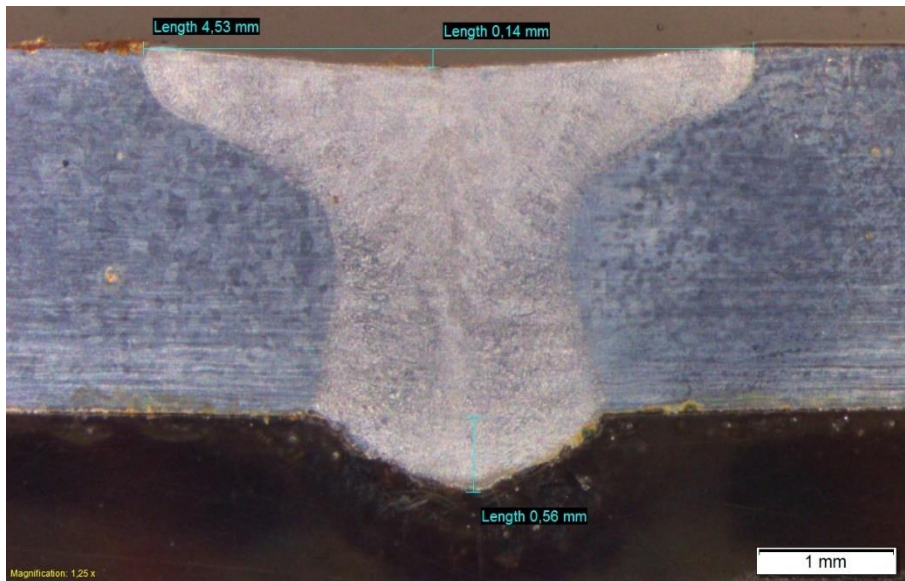
1.100.2.



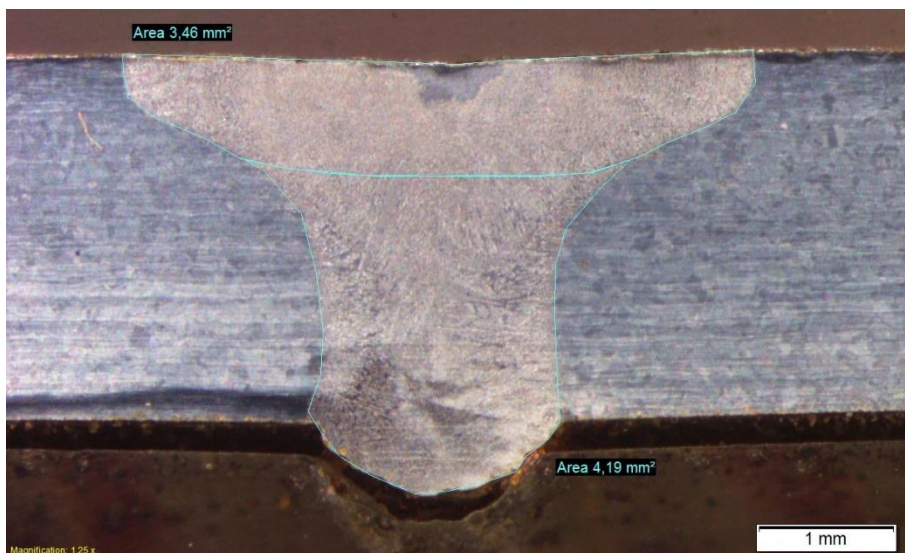
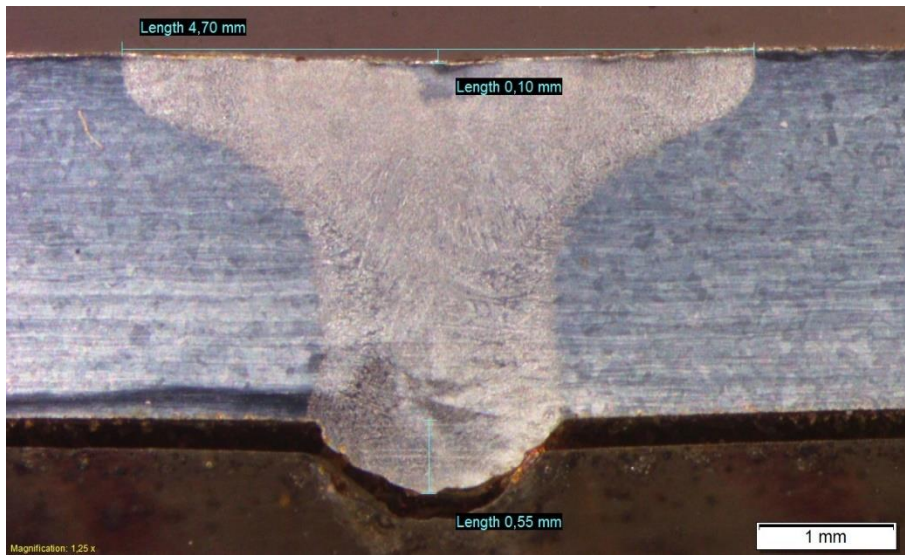
1.90.1.



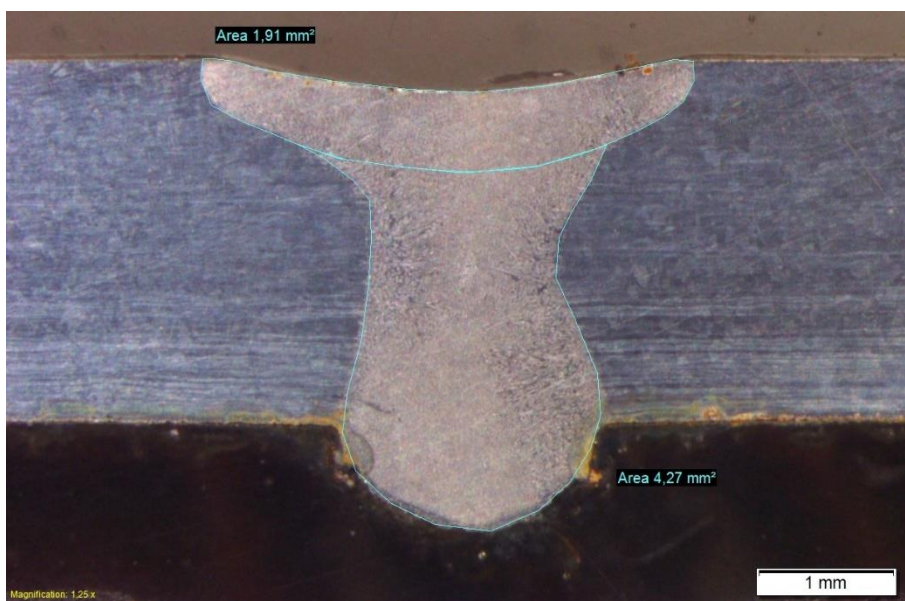
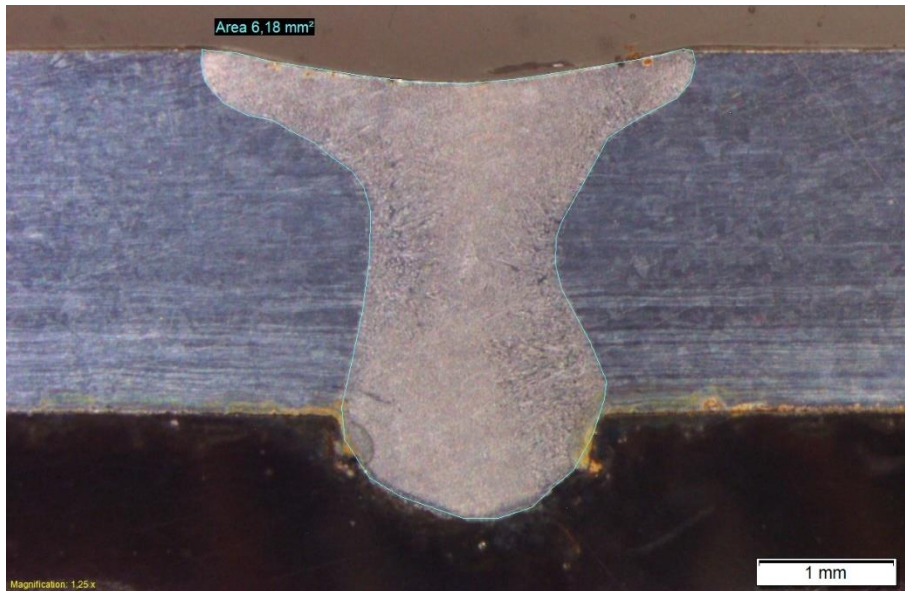
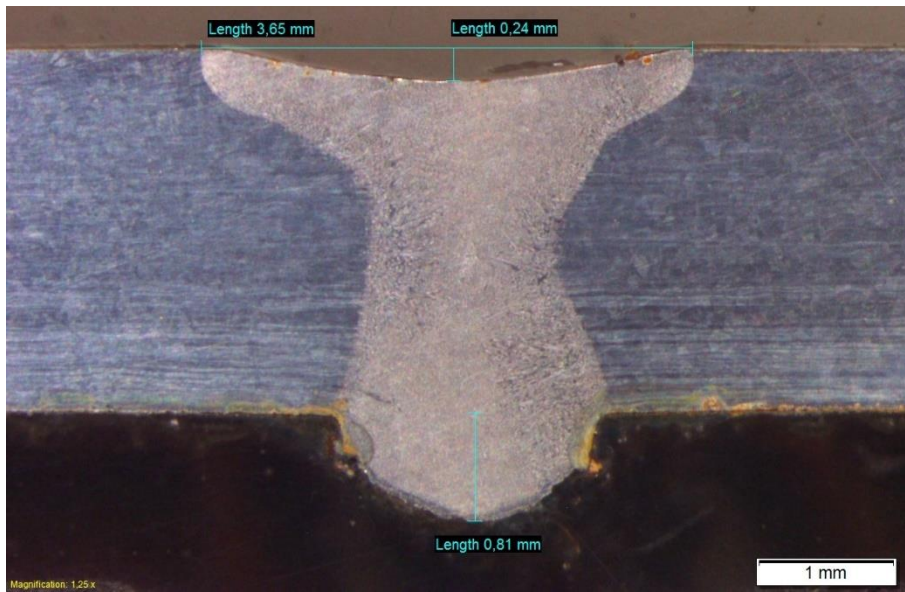
1.90.2.



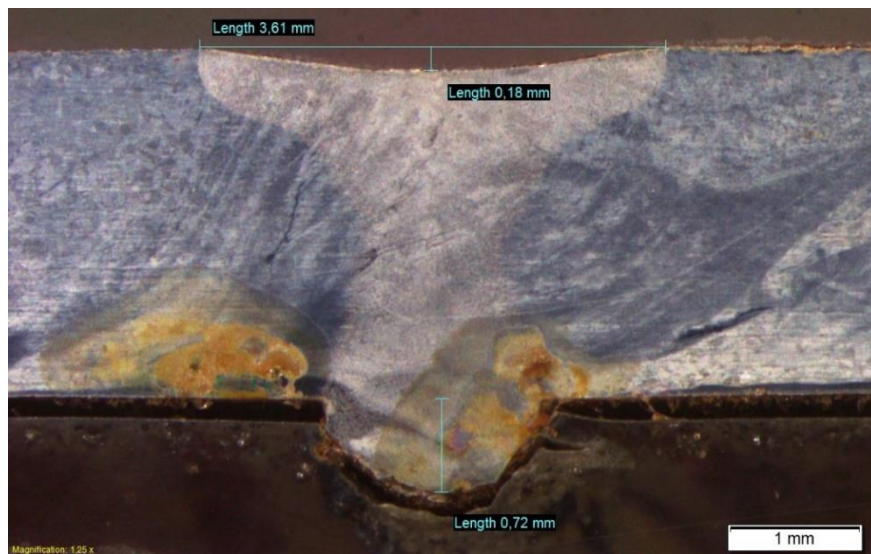
1.80.1.



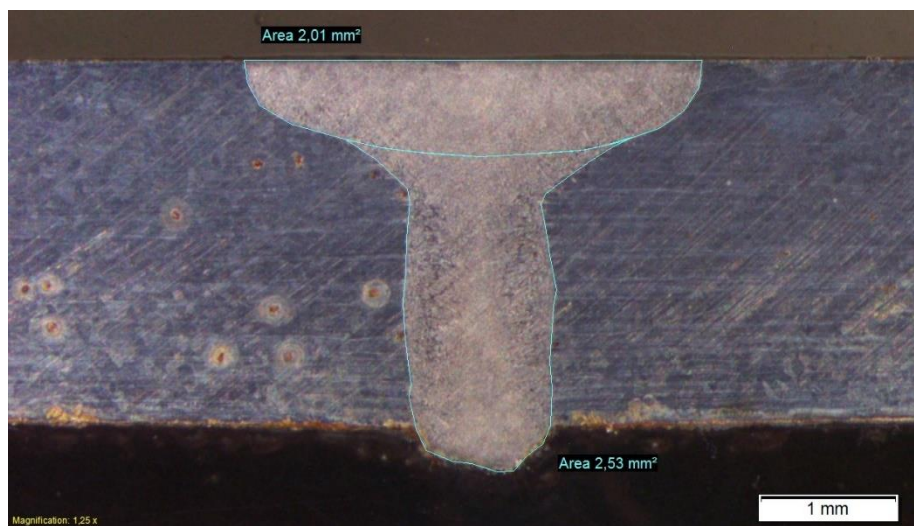
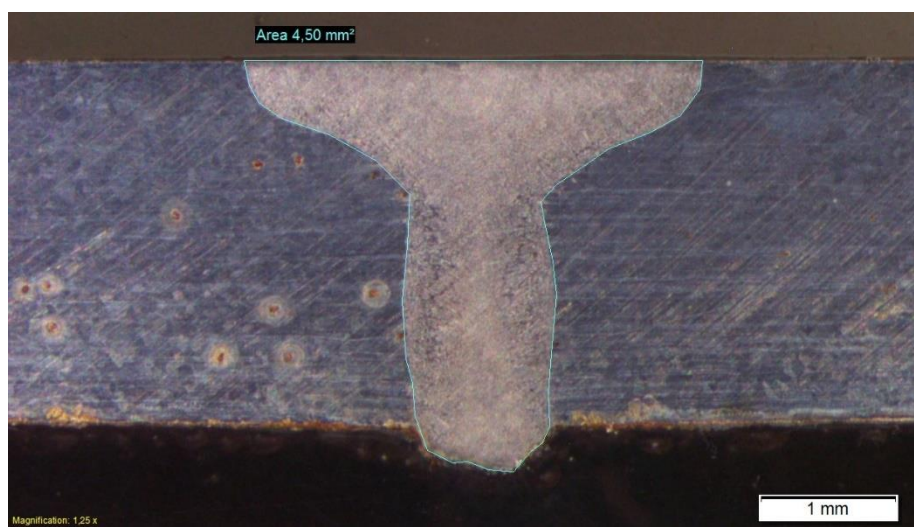
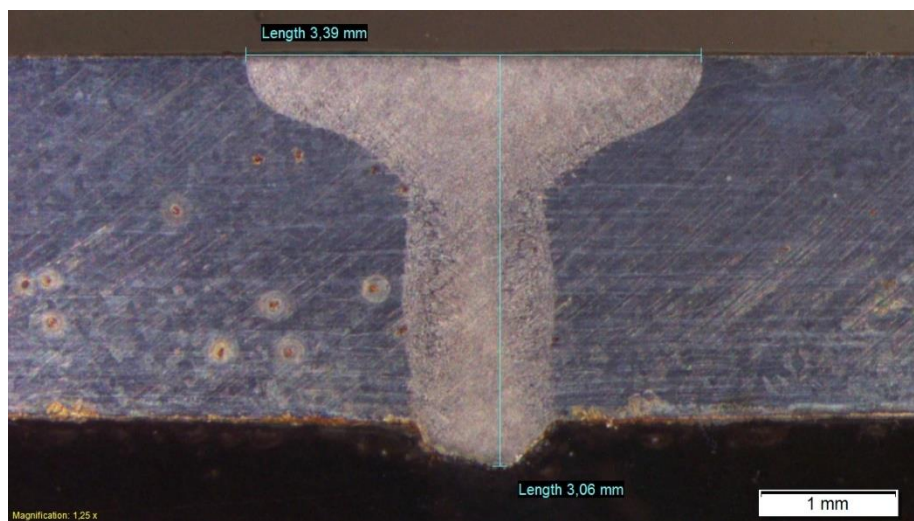
1.80.2.



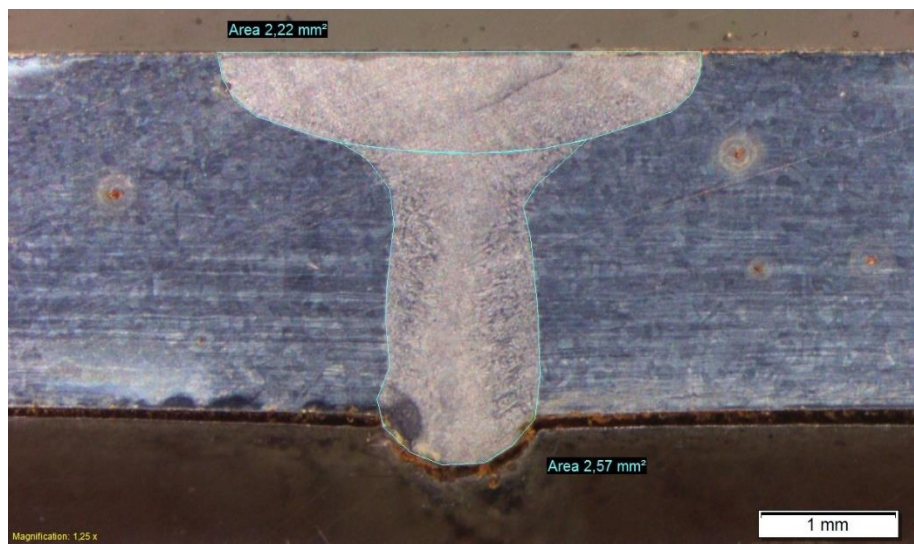
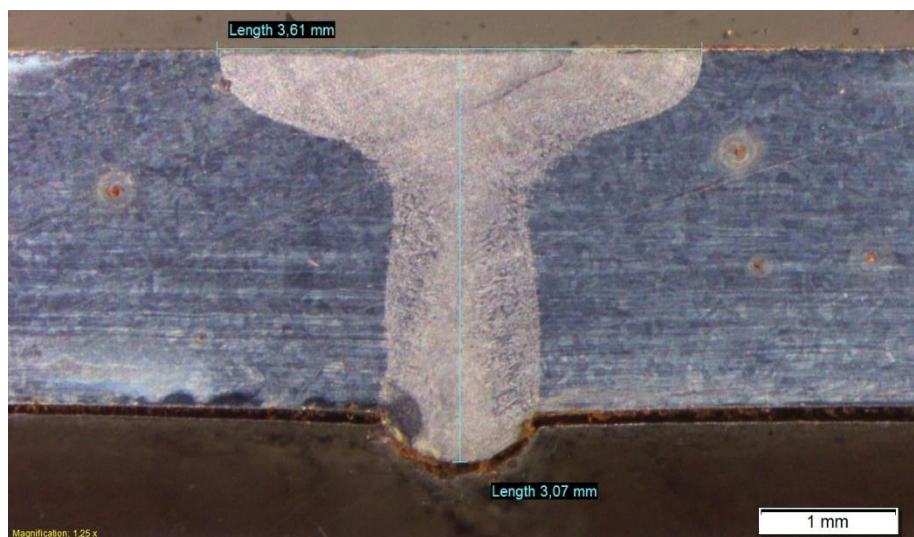
1.70.1.



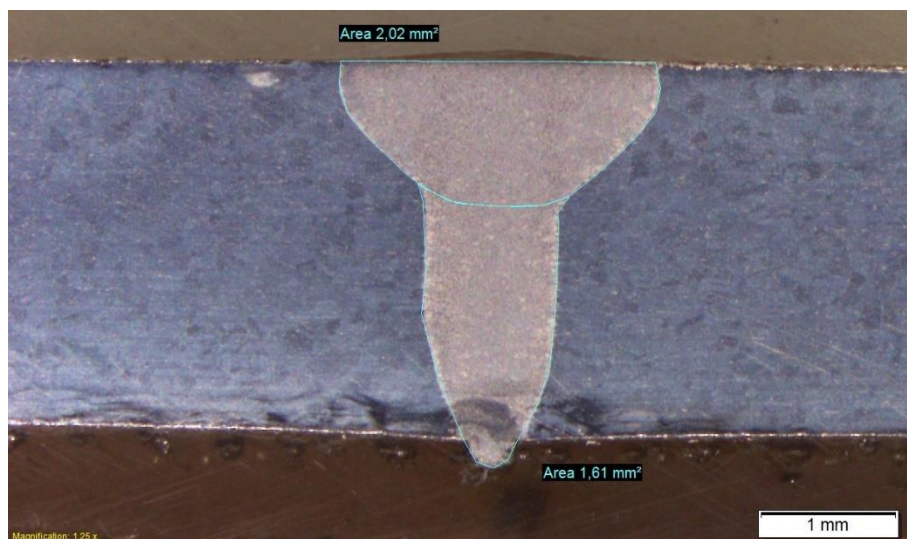
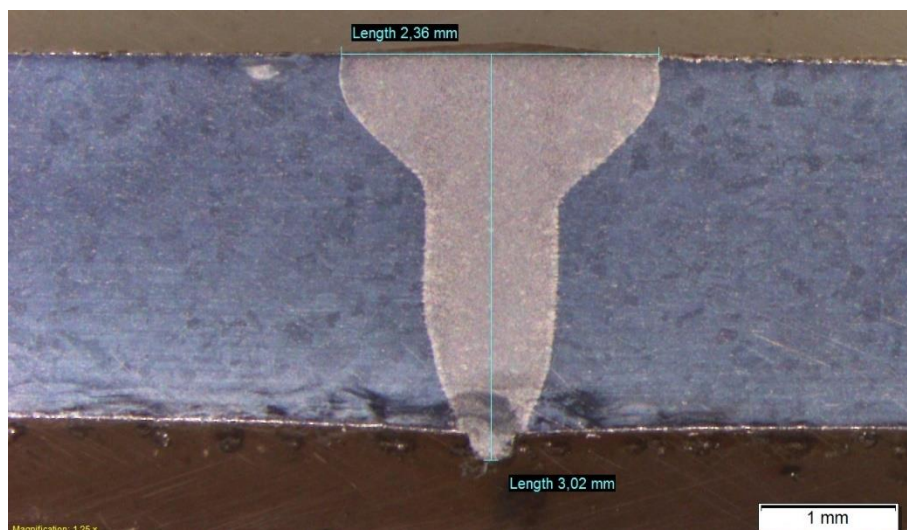
1.70.2.



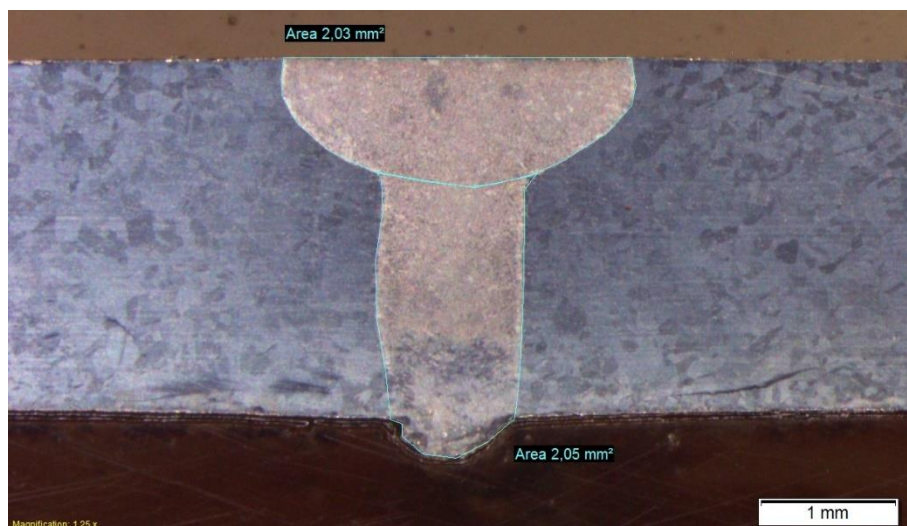
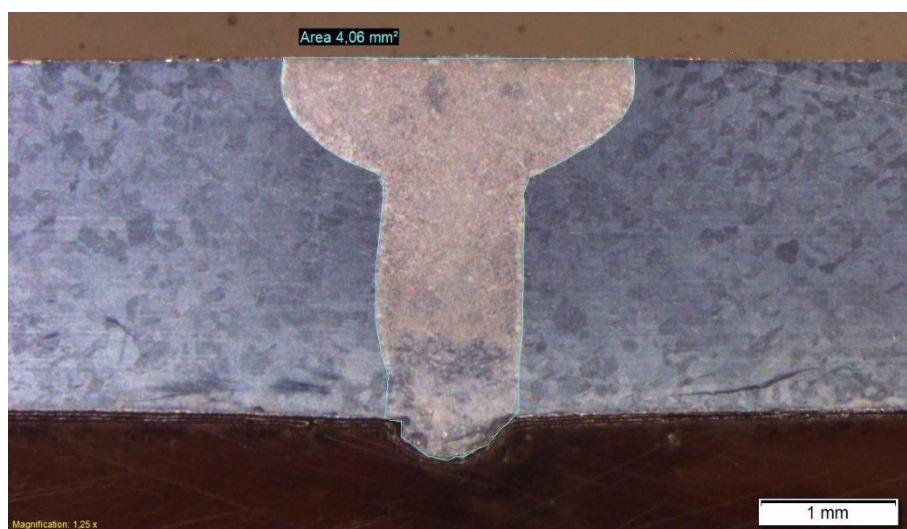
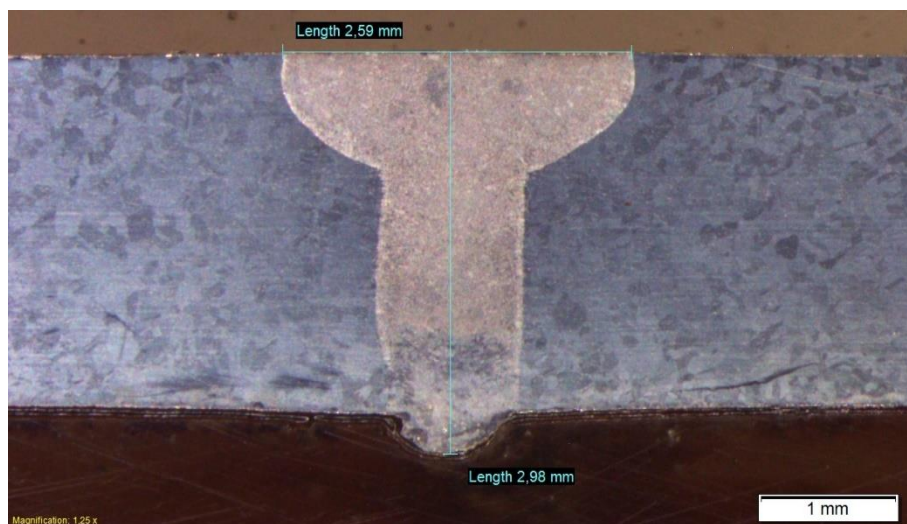
1.60.1.



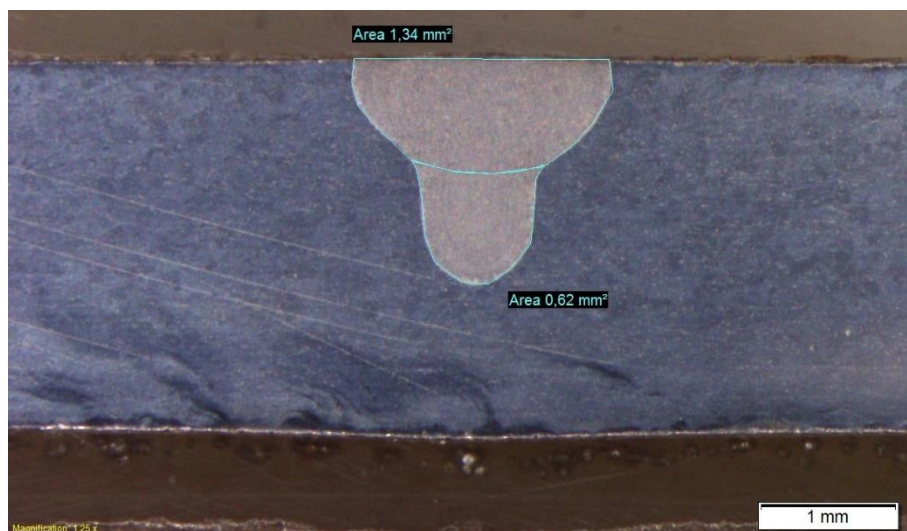
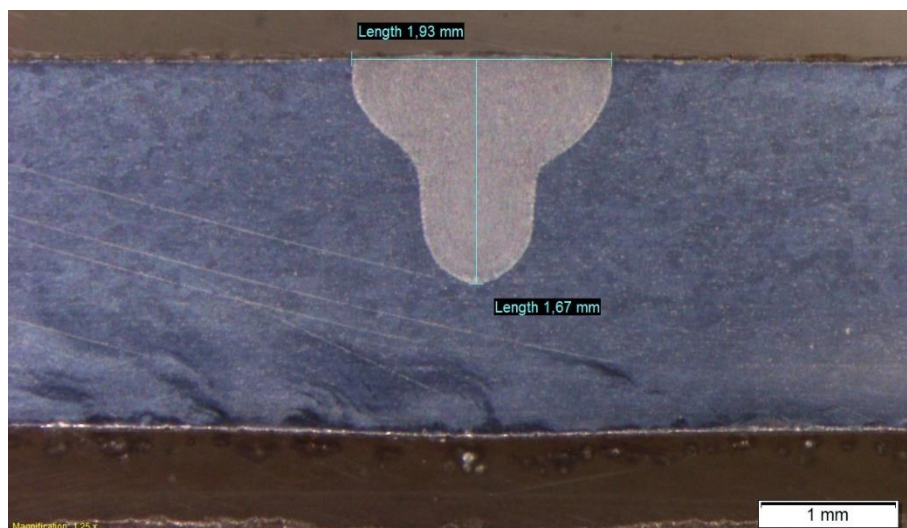
1.60.2.



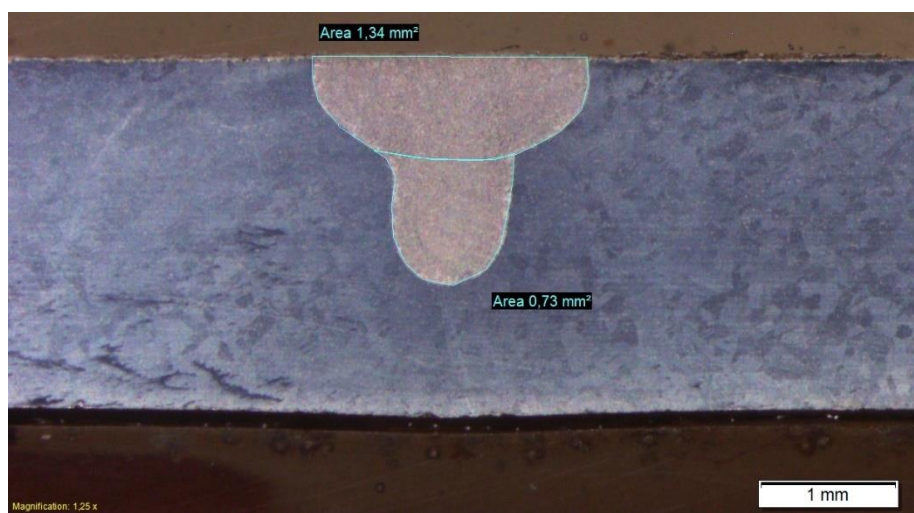
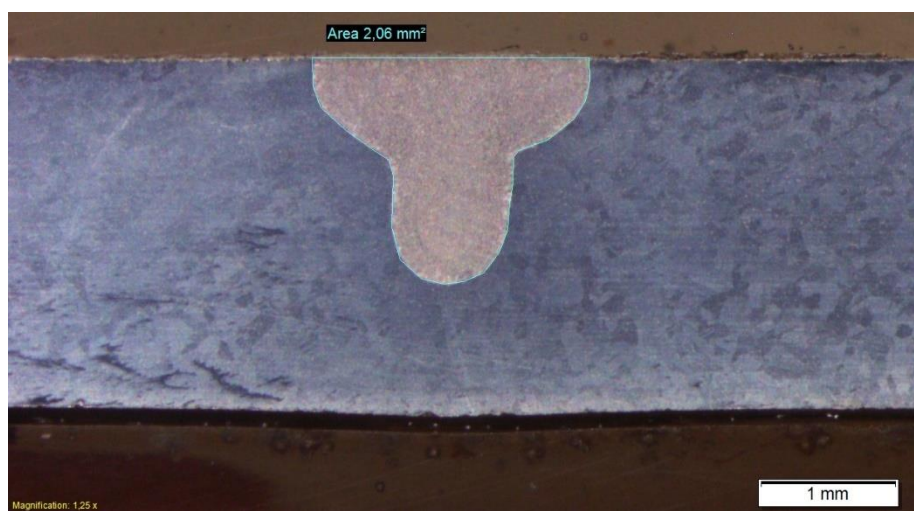
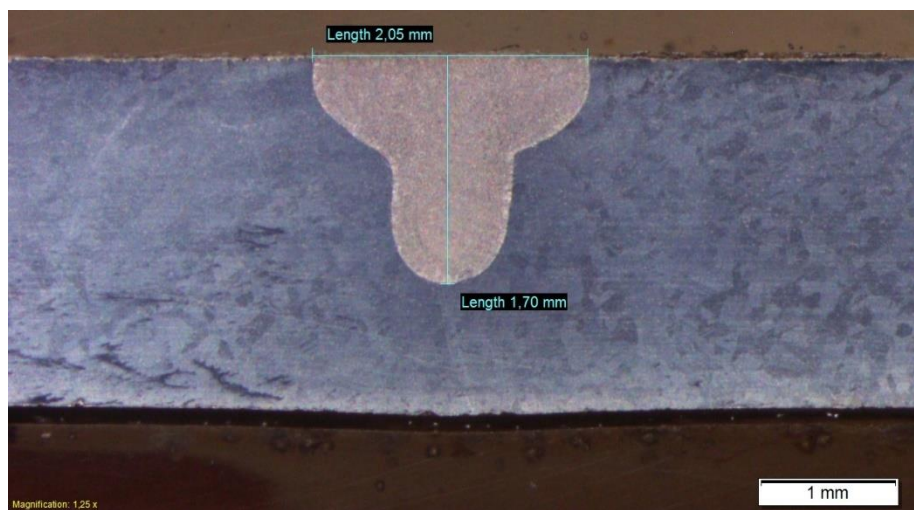
1.50.1.



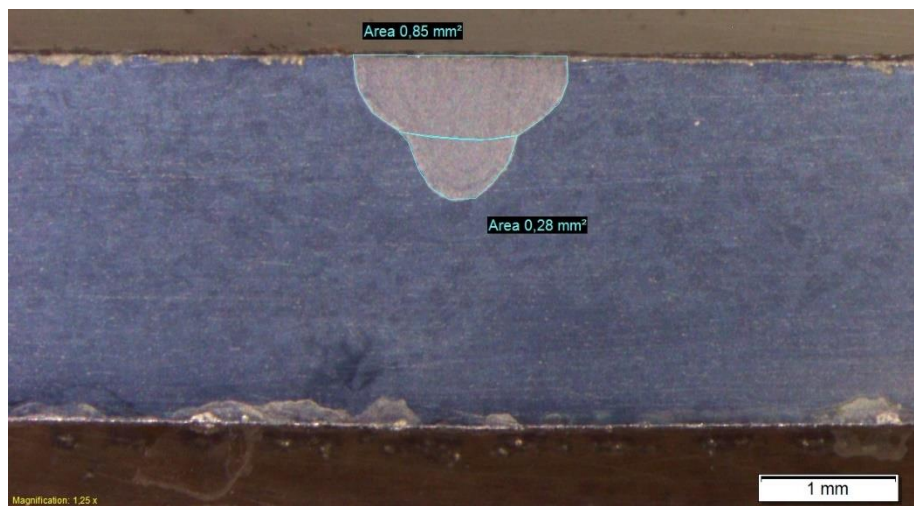
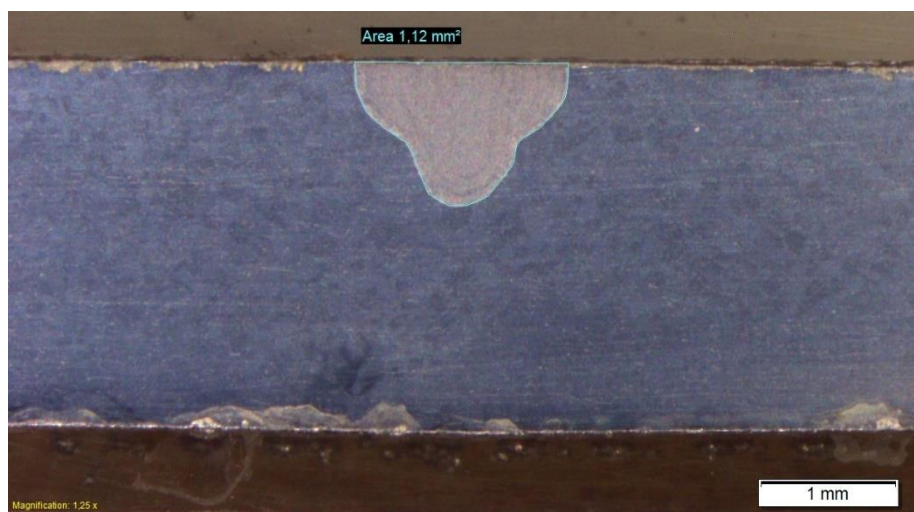
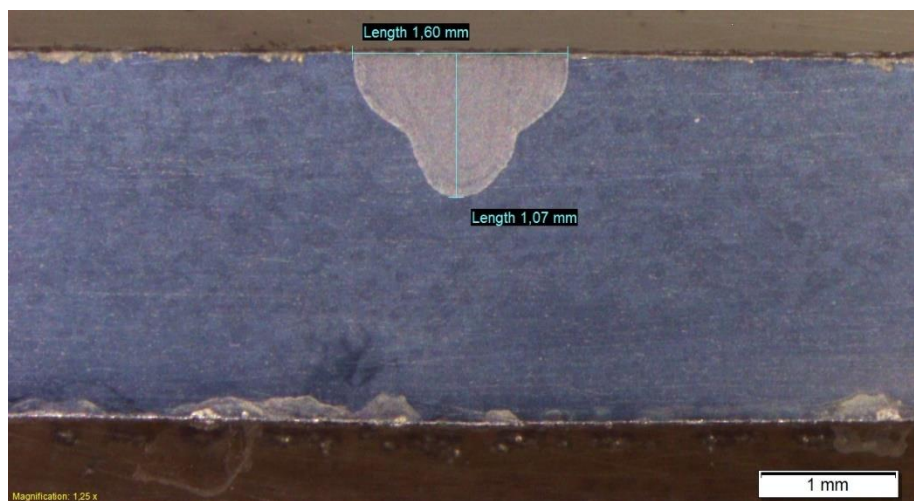
1.50.2.



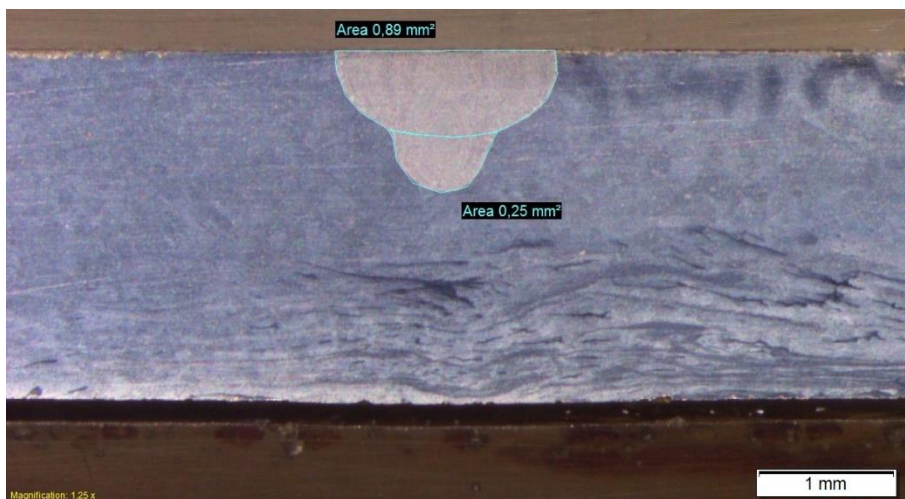
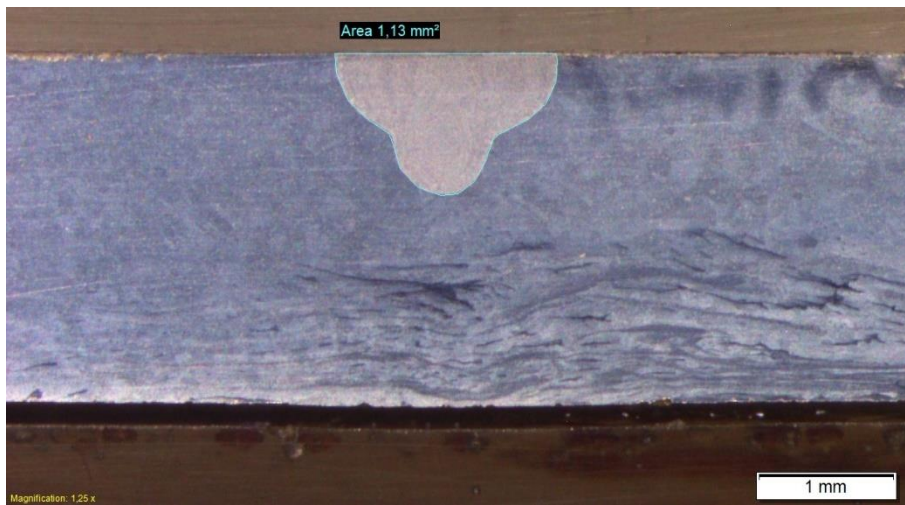
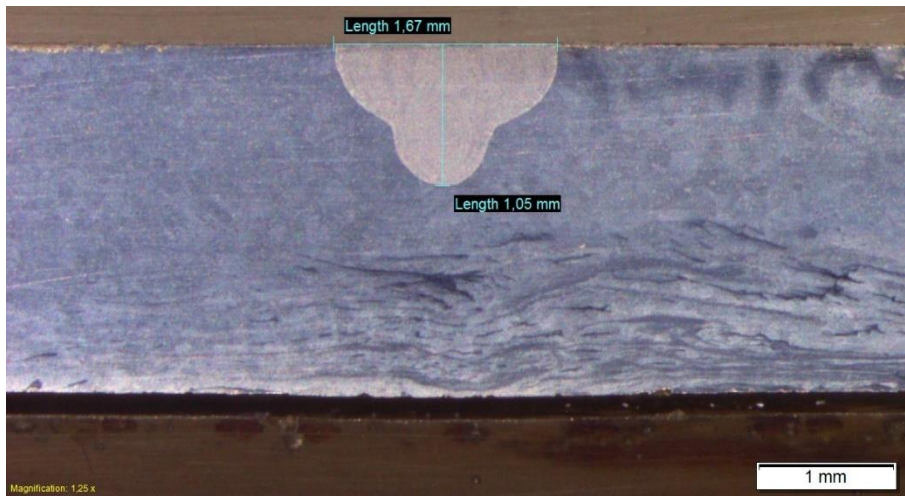
1.40.1.



1.40.2.



1.30.1.



1.30.2.

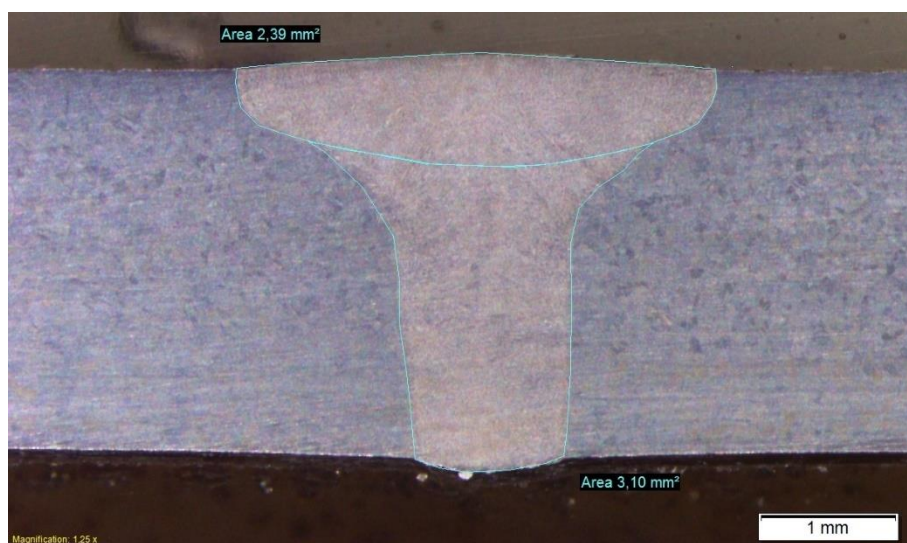
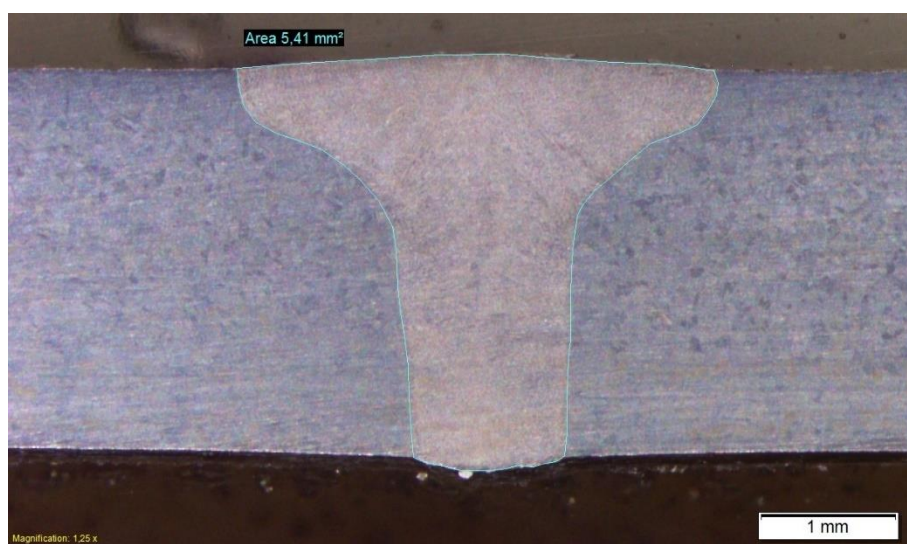
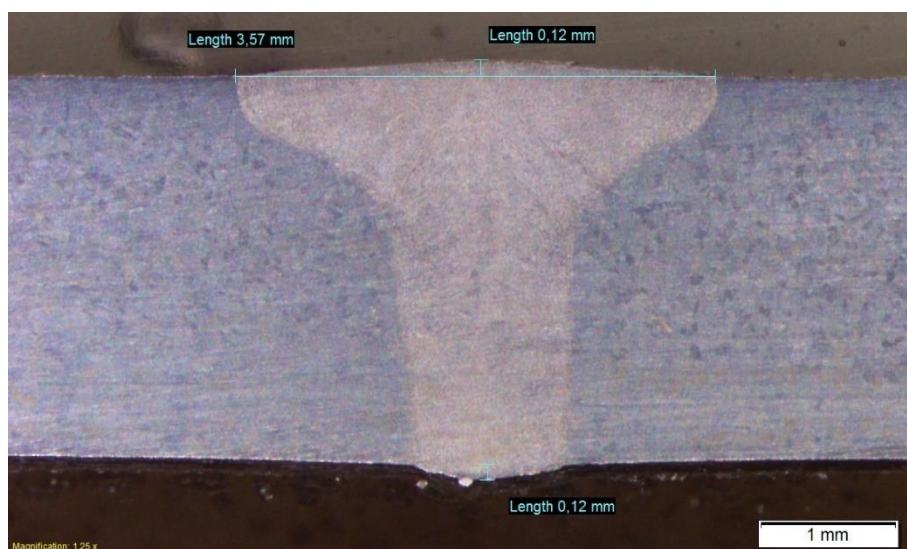


1.20.1.

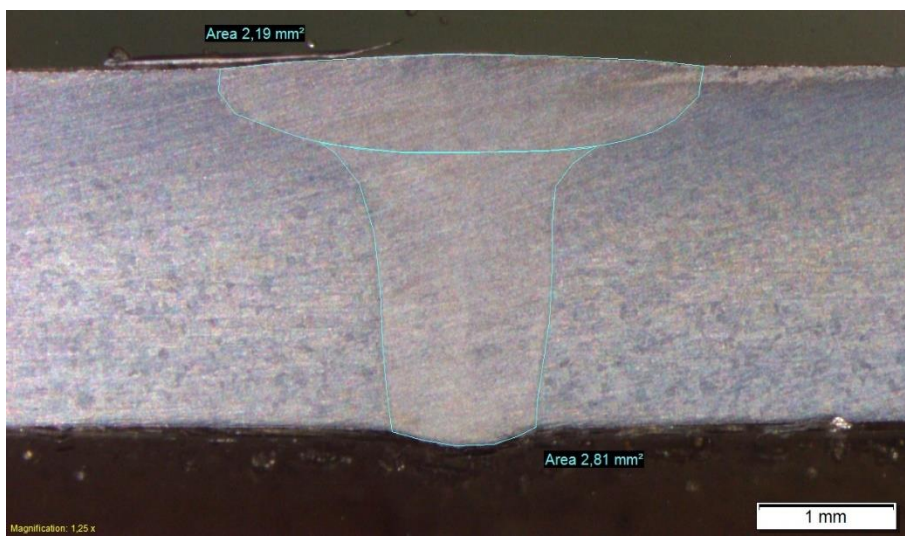
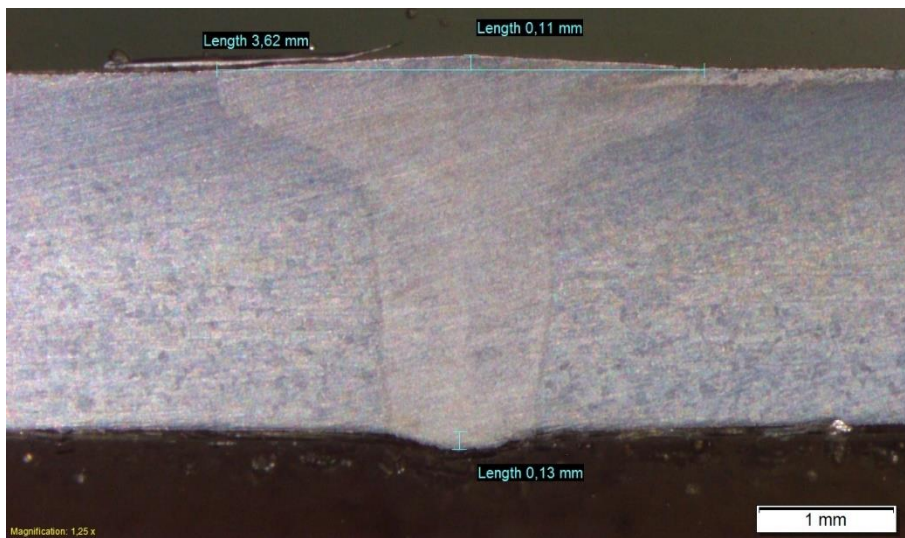


1.20.2.

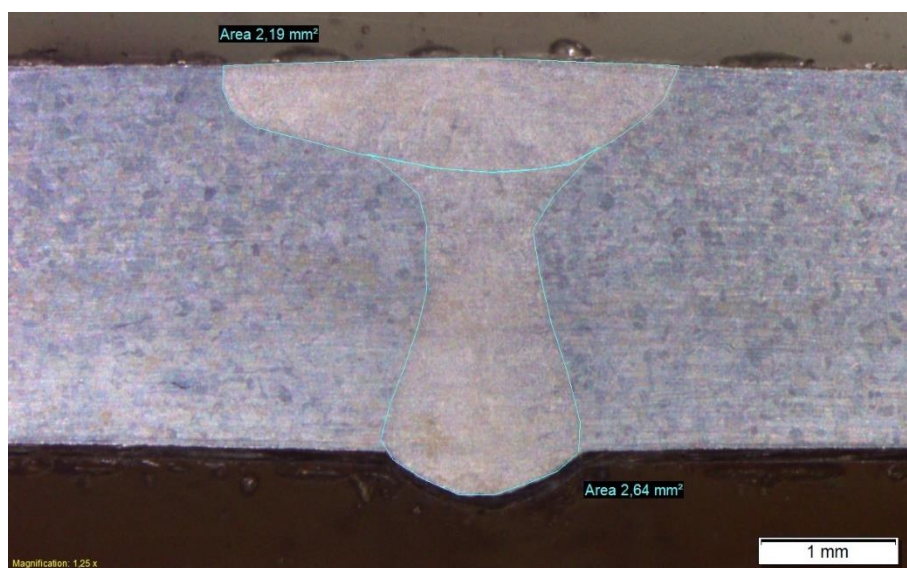
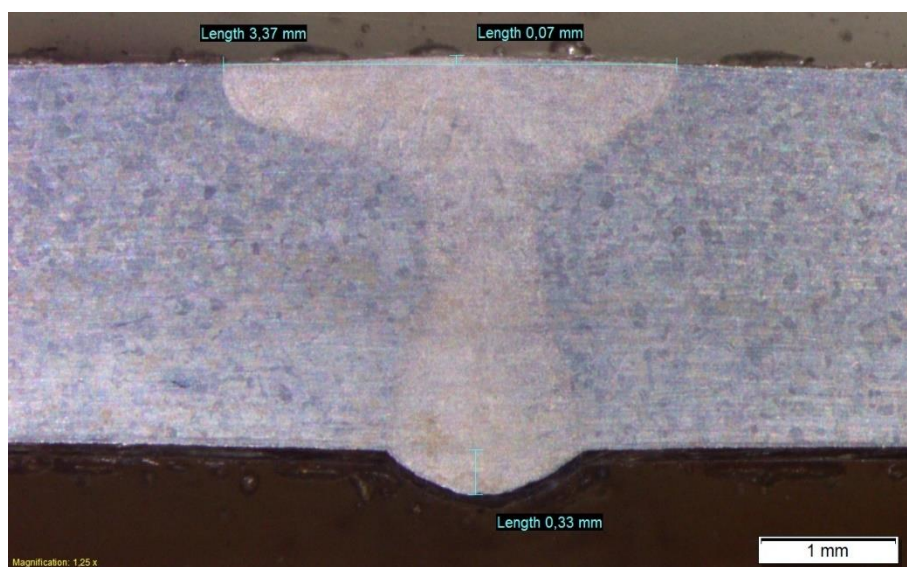
A második kísérletsorozat ($v=40$ cm/min) mikroszkópi képei:



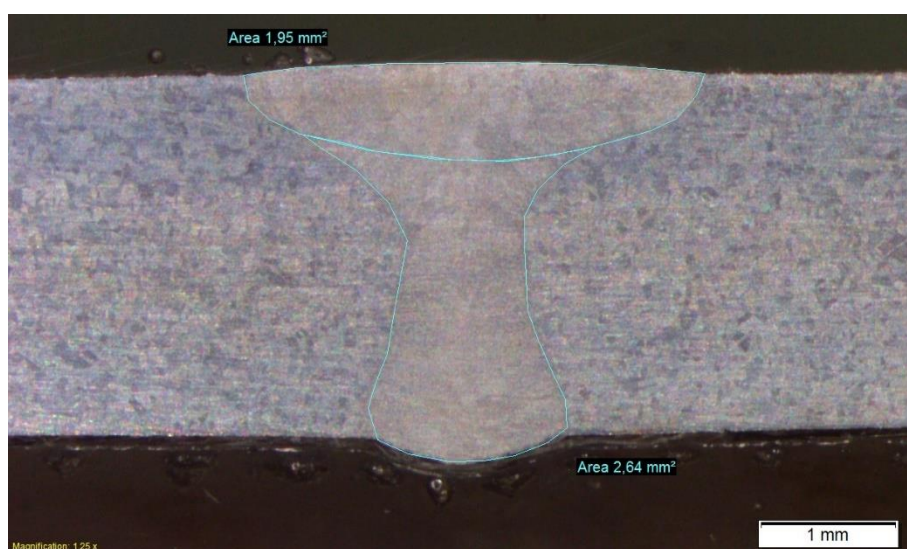
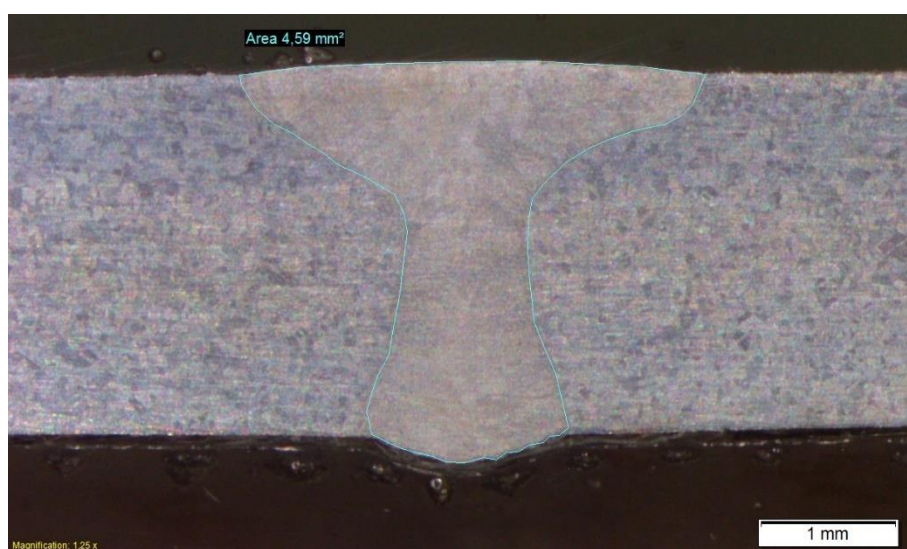
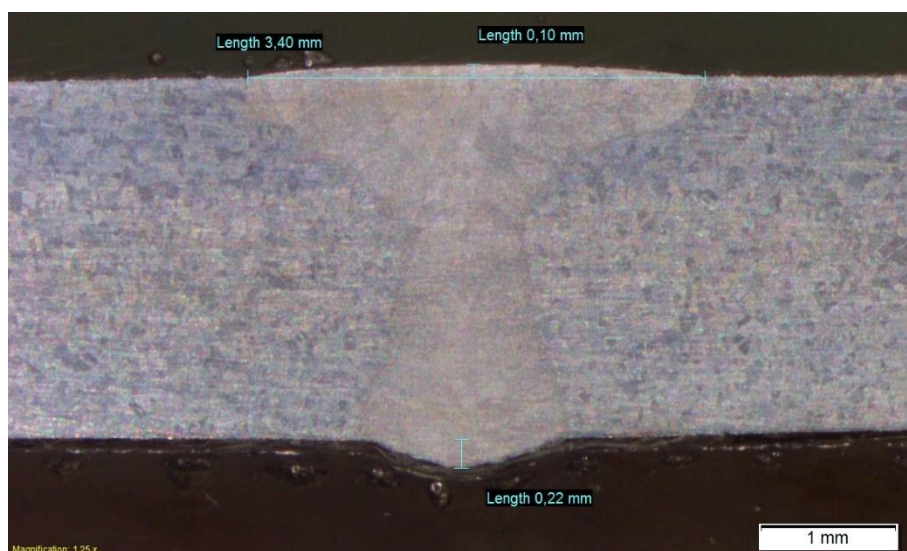
2.100.1.



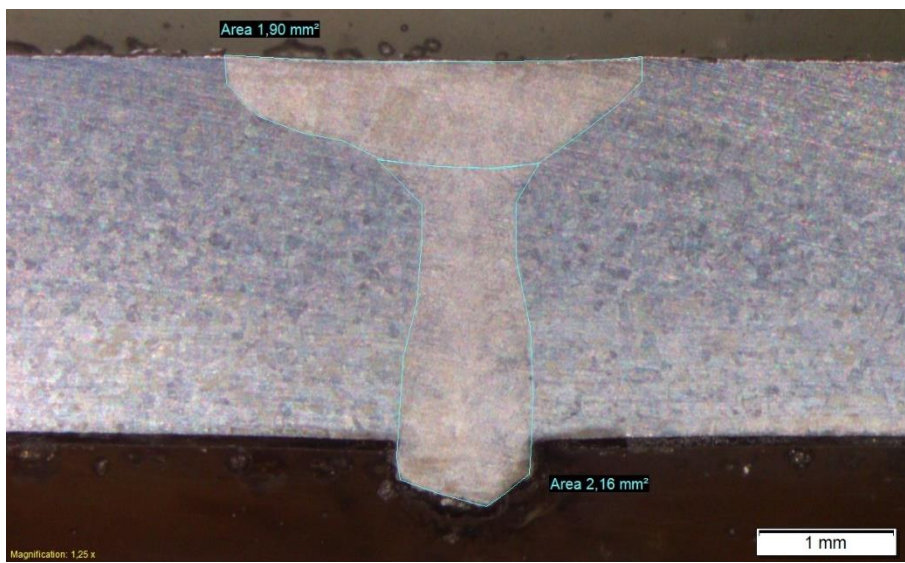
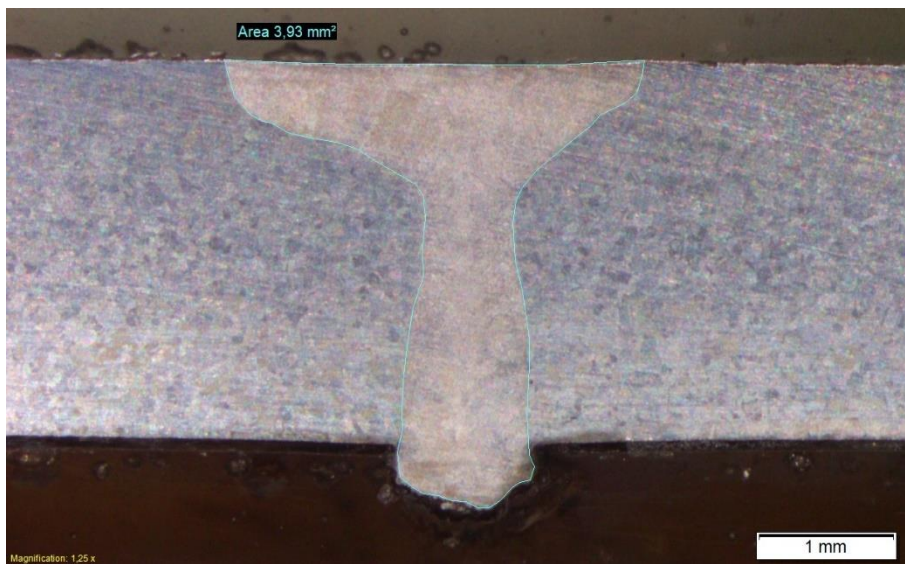
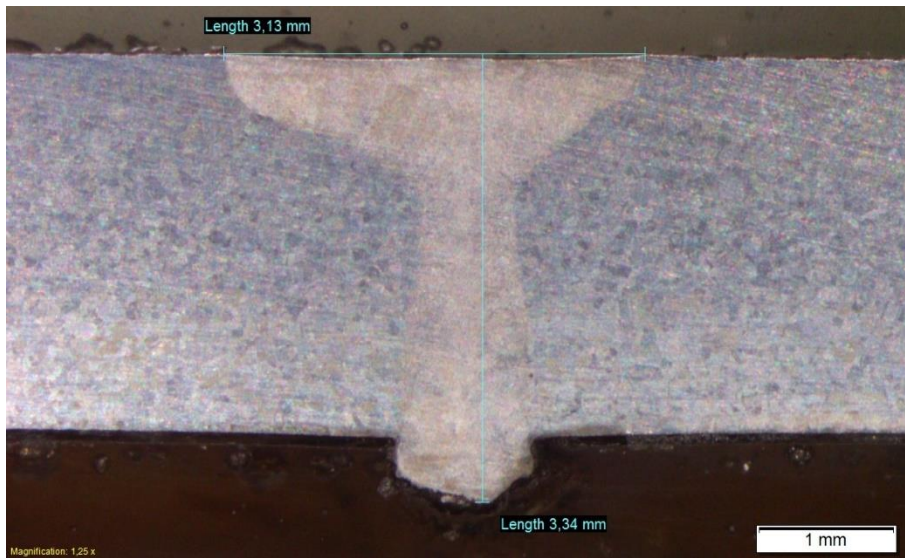
2.100.2.



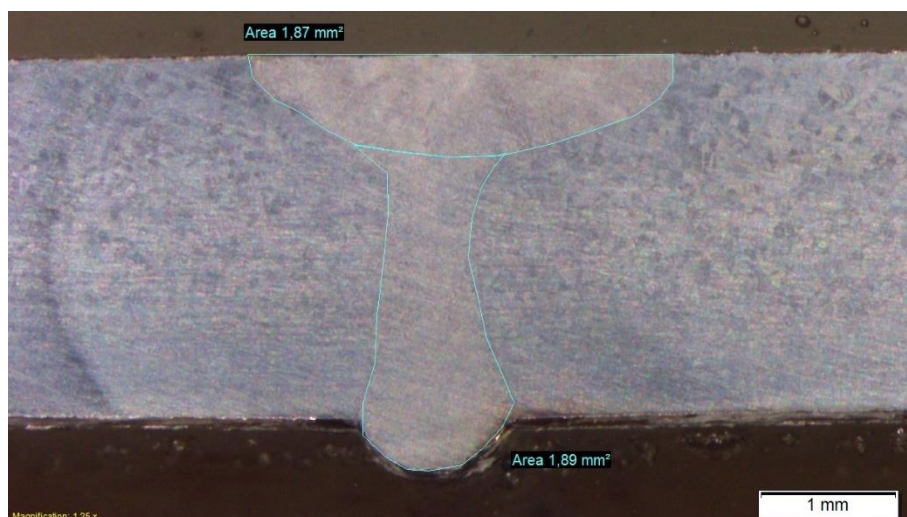
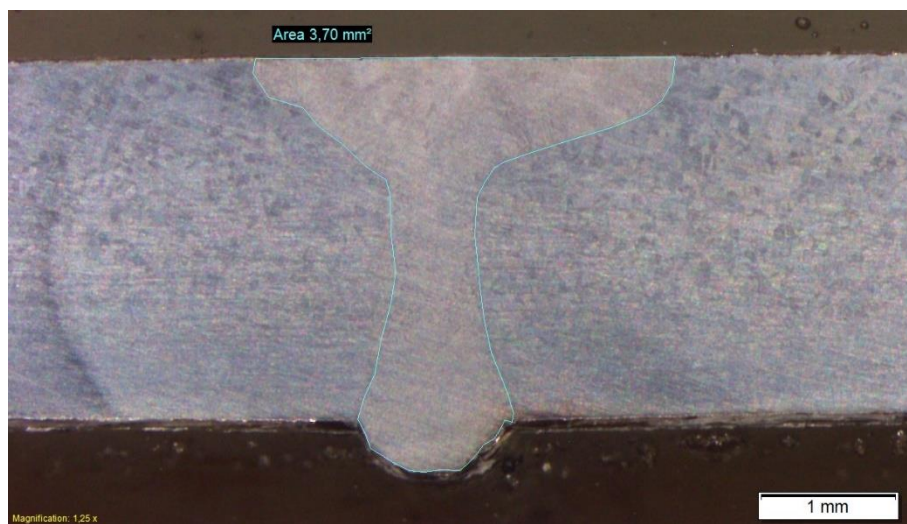
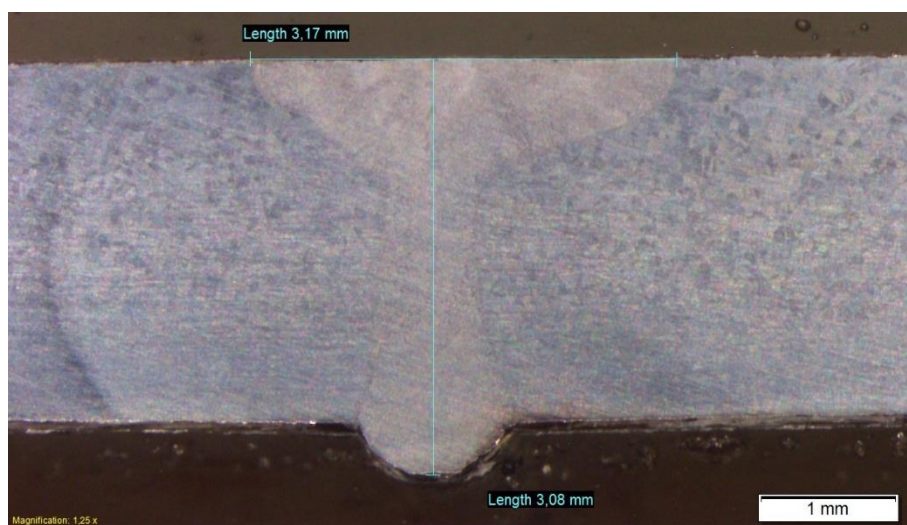
2.90.1.



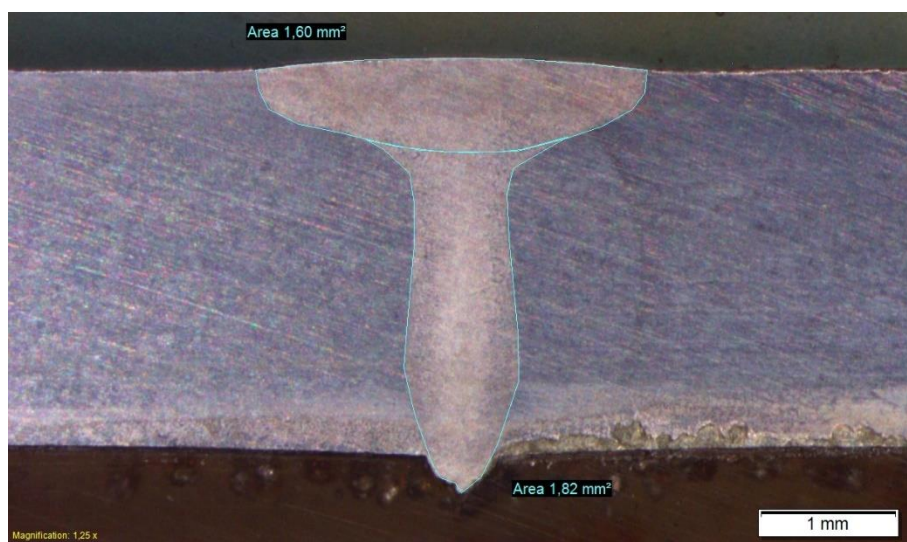
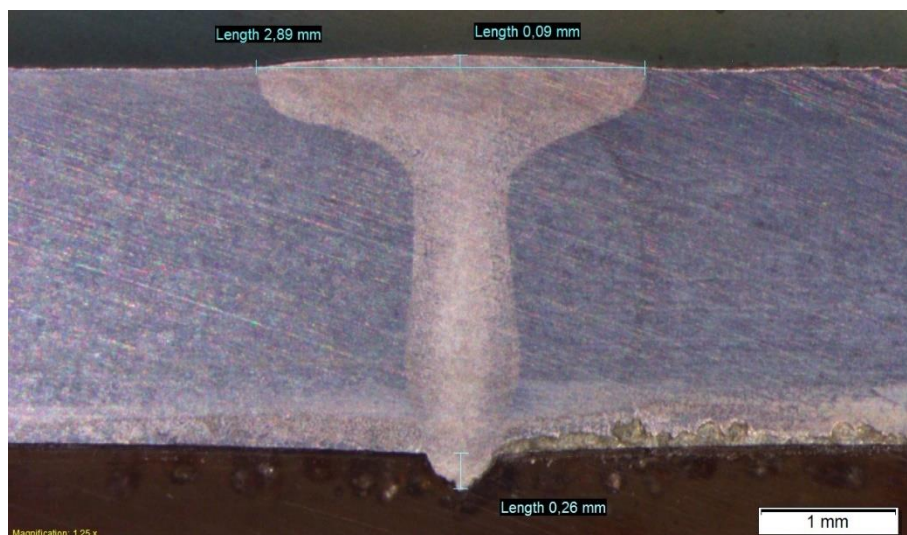
2.90.2.



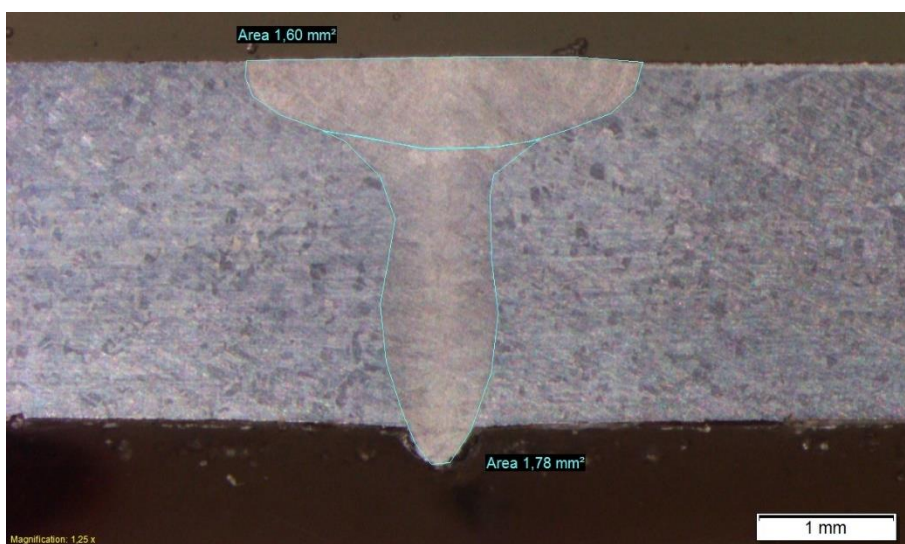
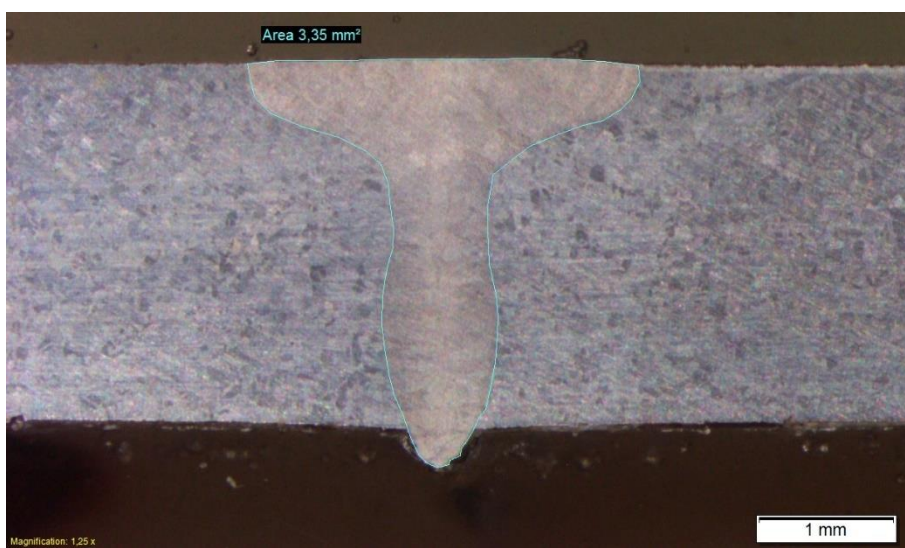
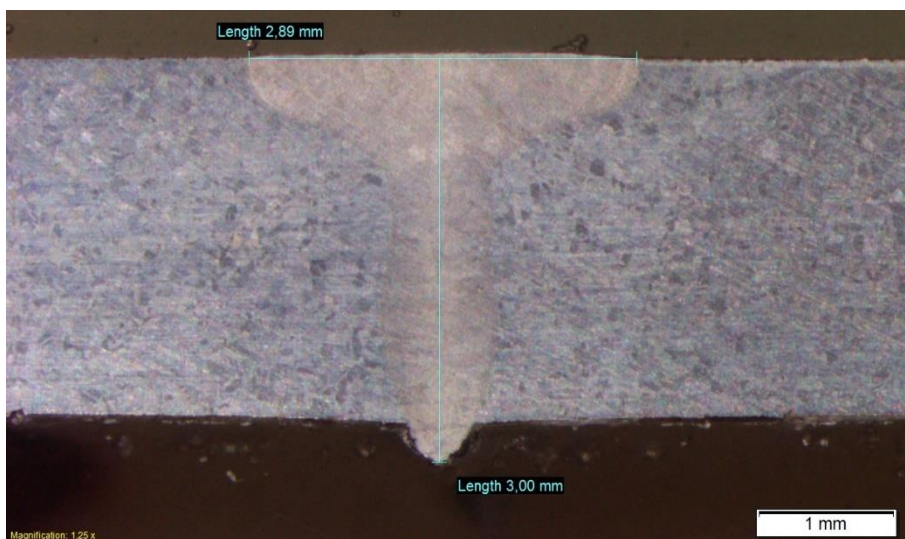
2.80.1.



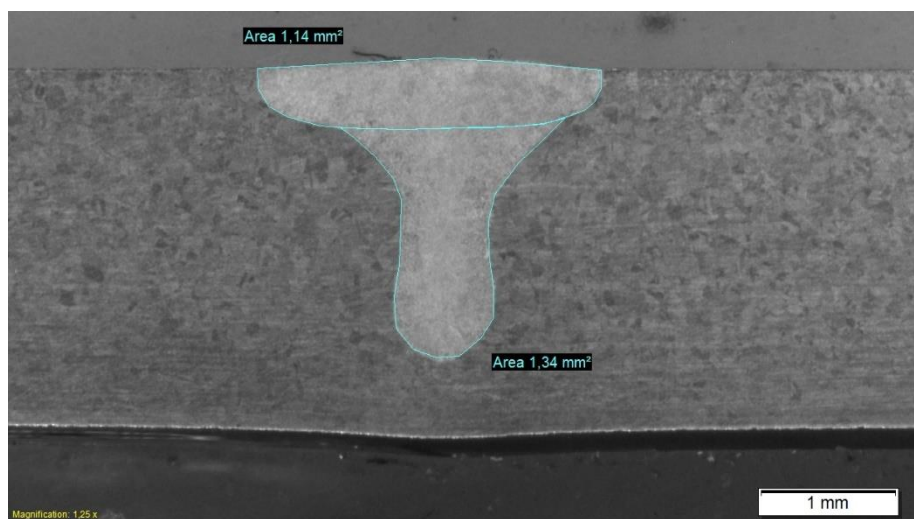
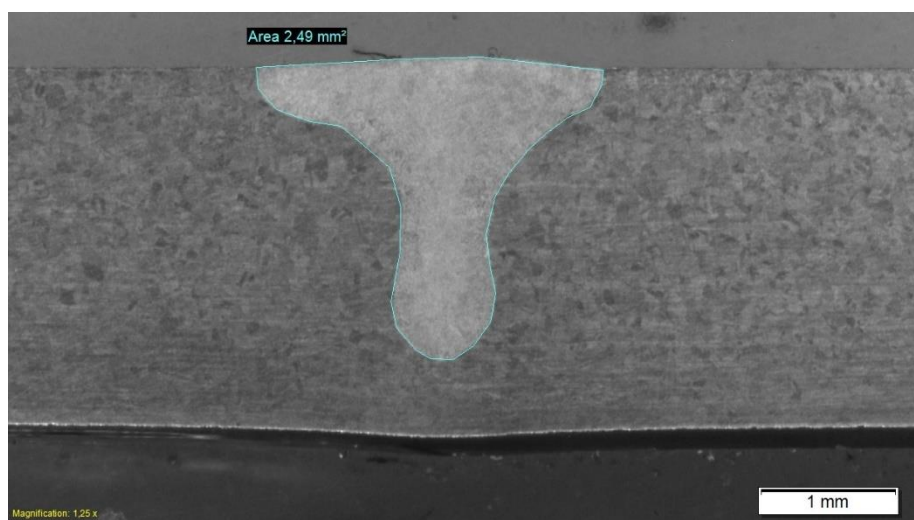
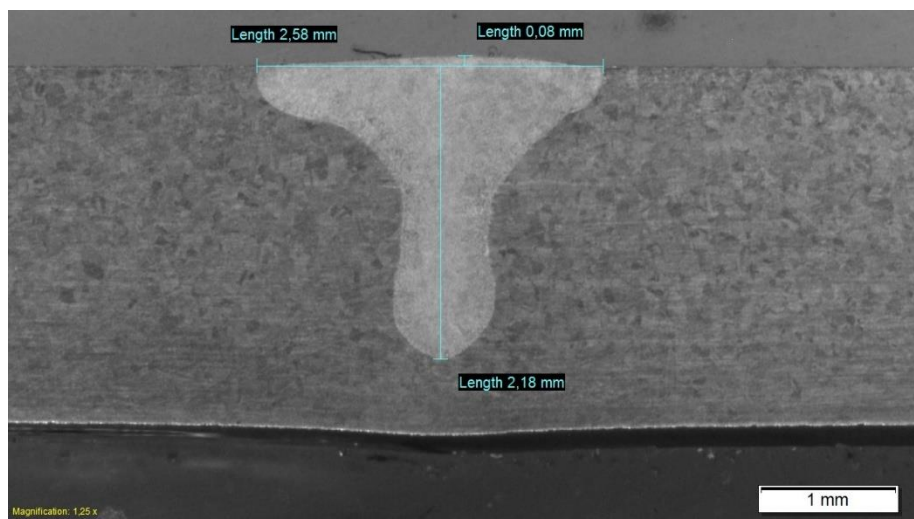
2.80.2.



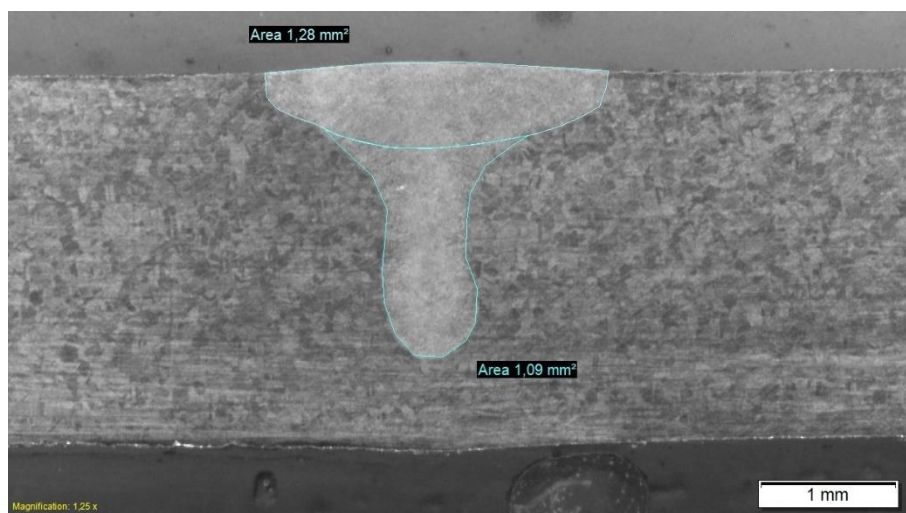
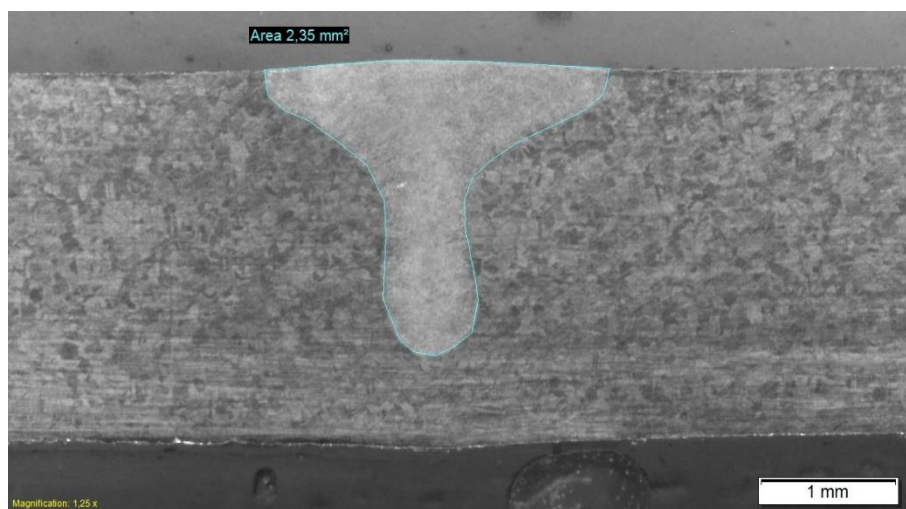
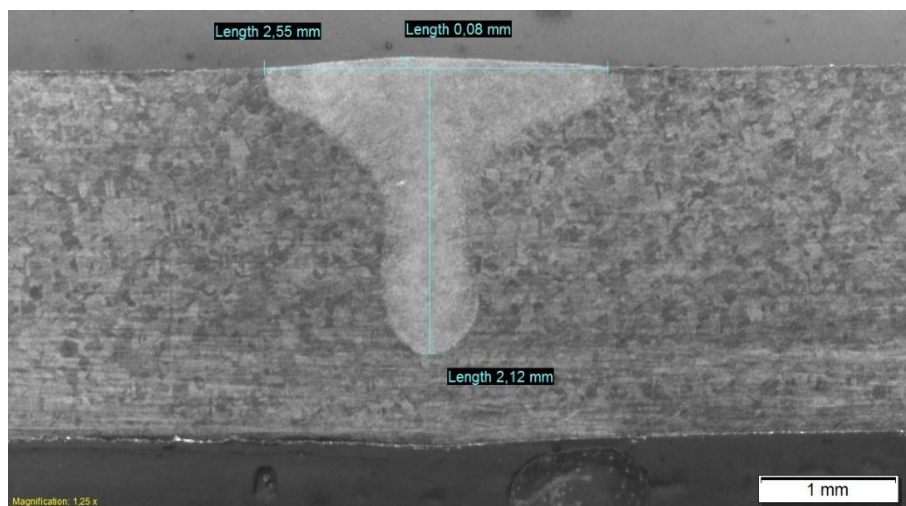
2.70.1.



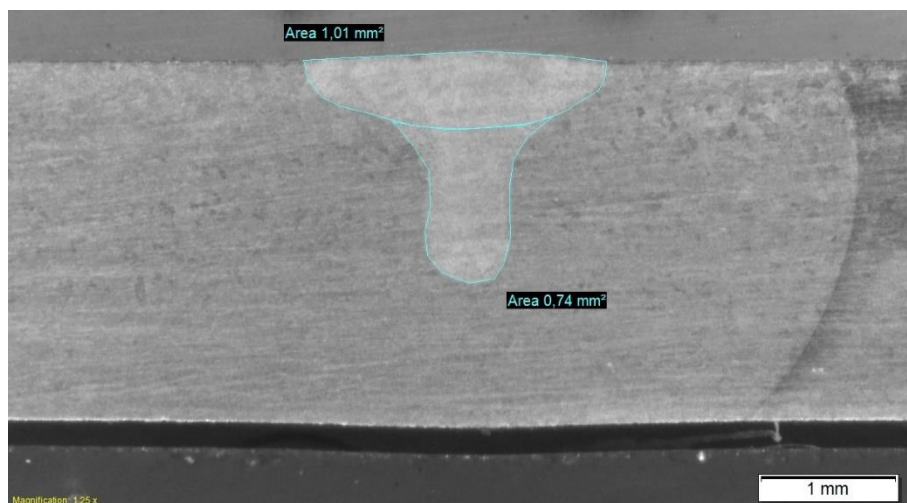
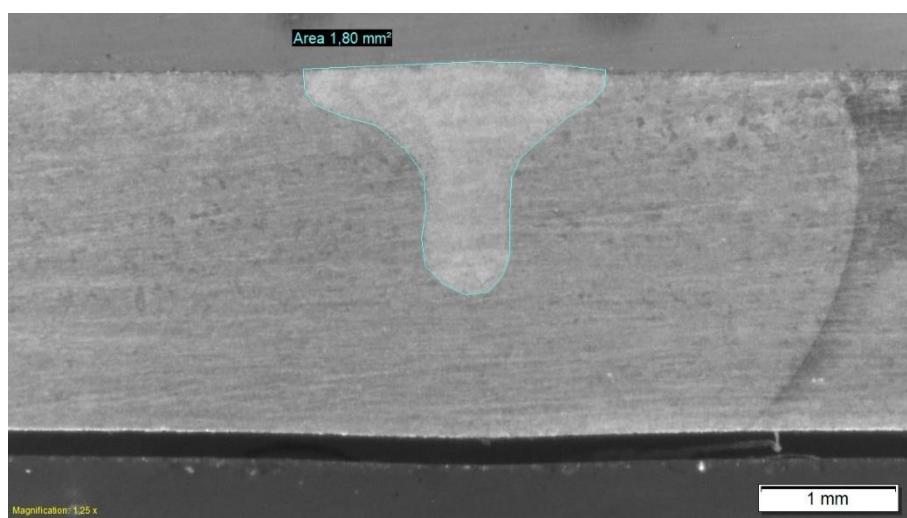
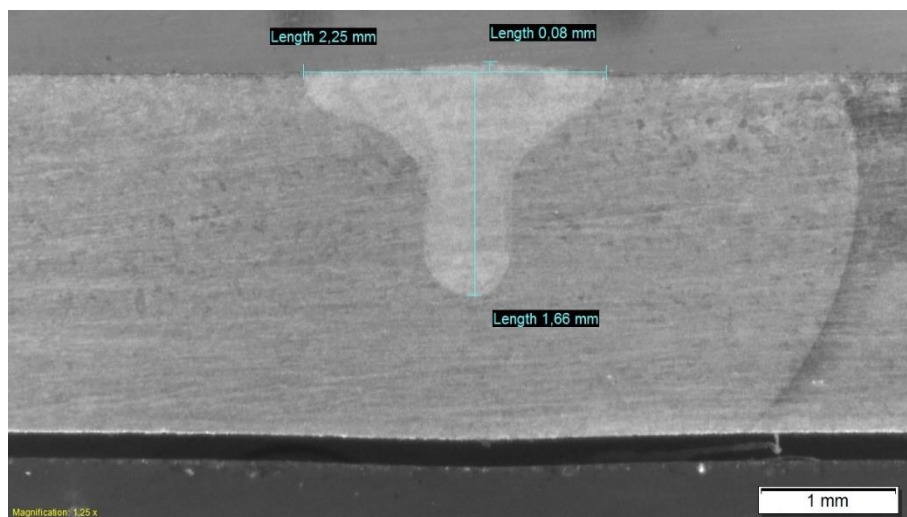
2.70.2.



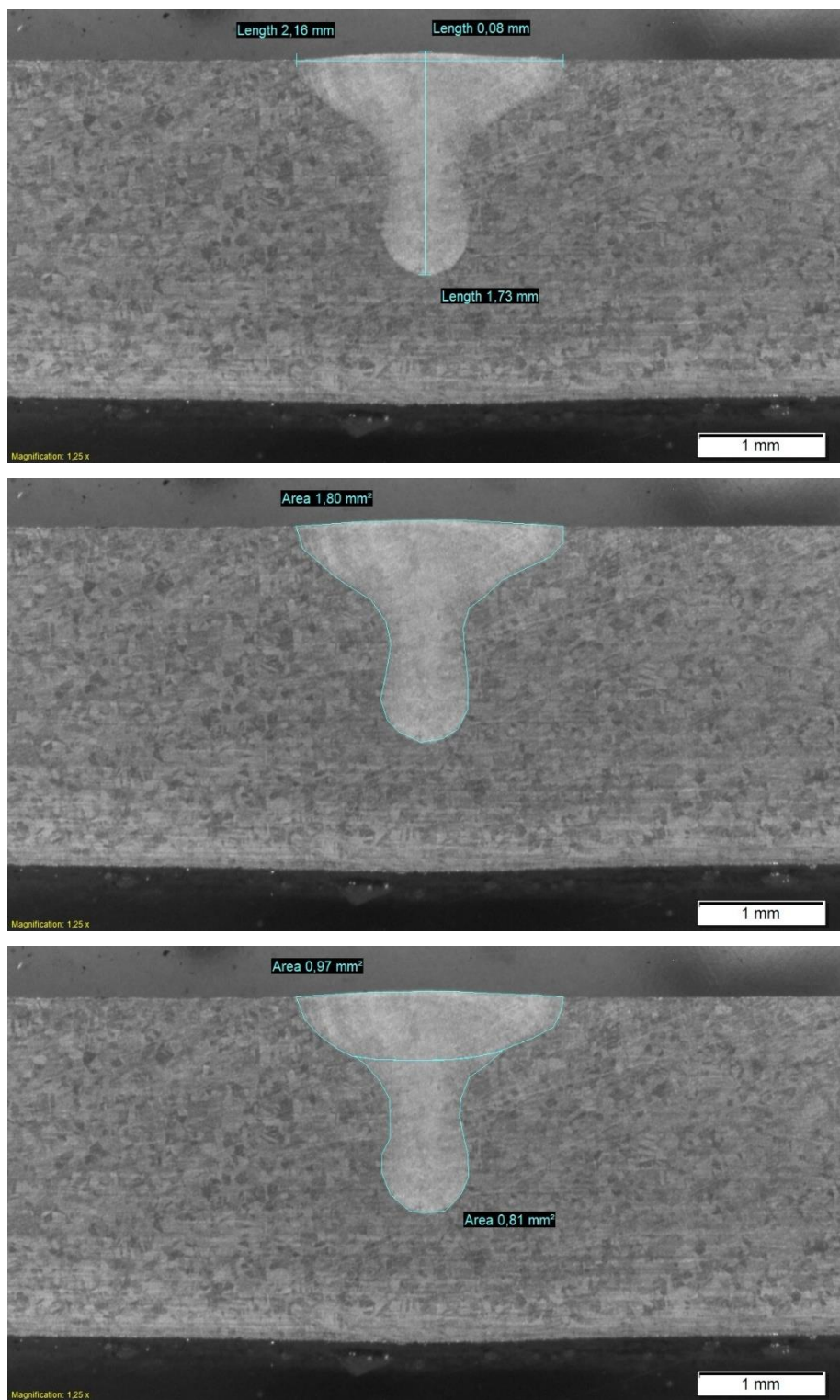
2.60.1.



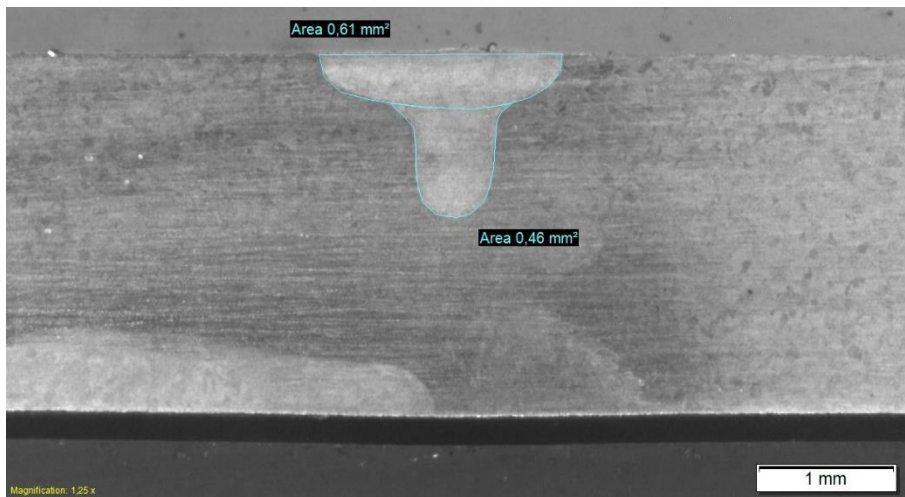
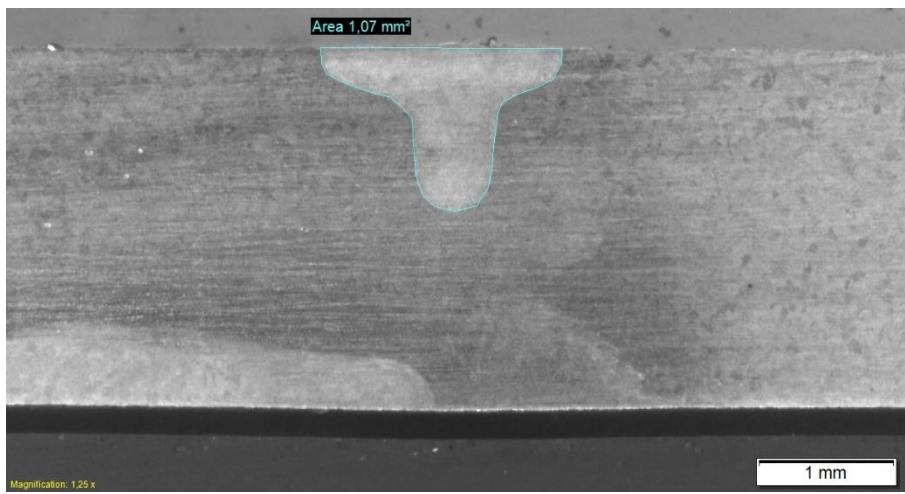
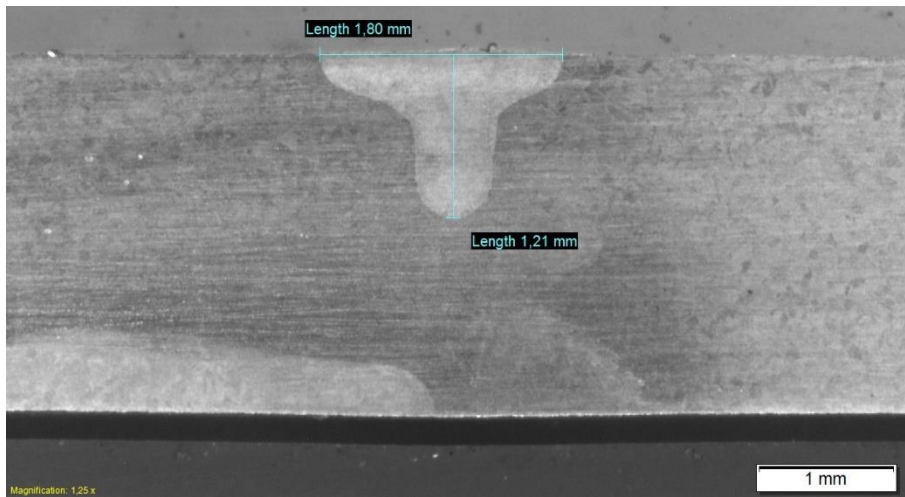
2.60.2.



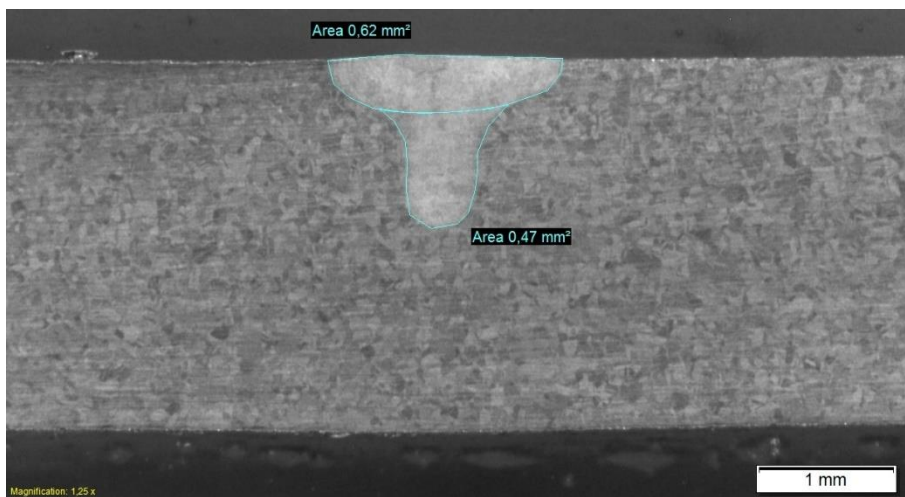
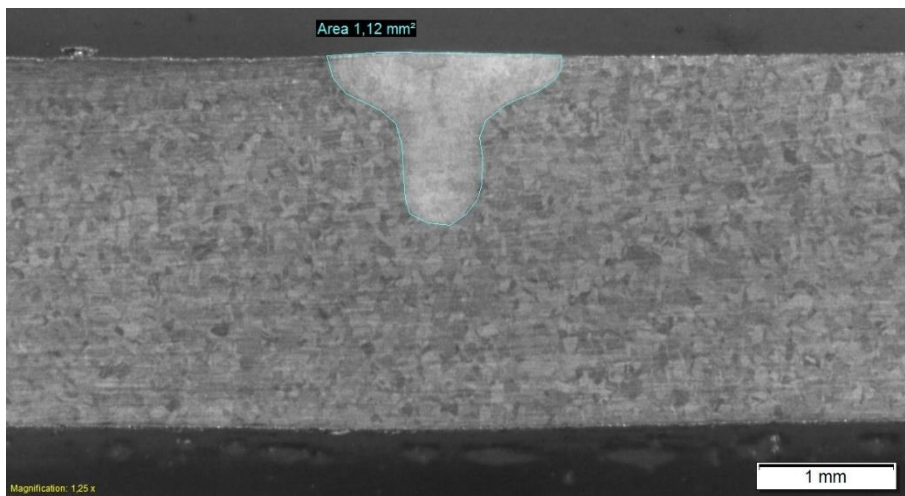
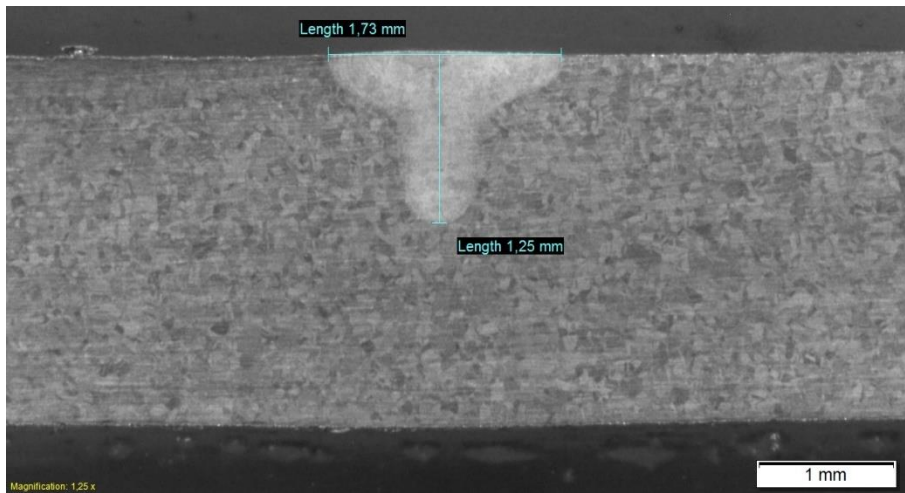
2.50.1.



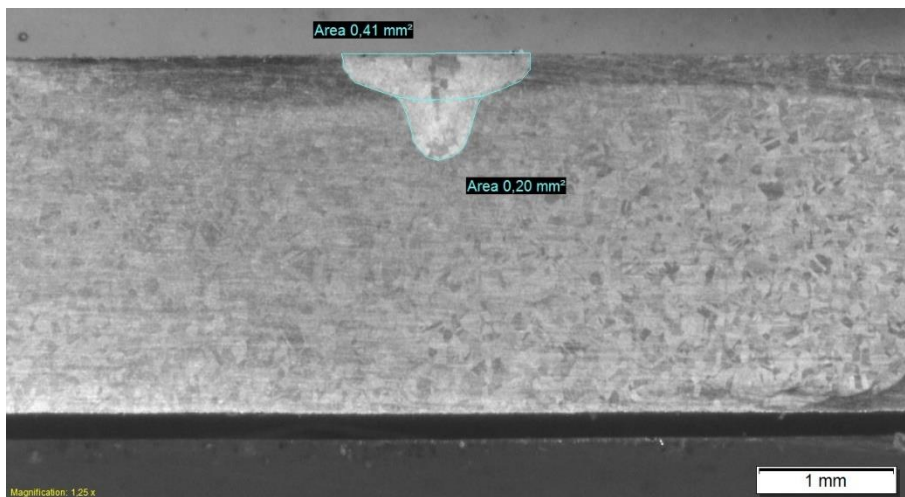
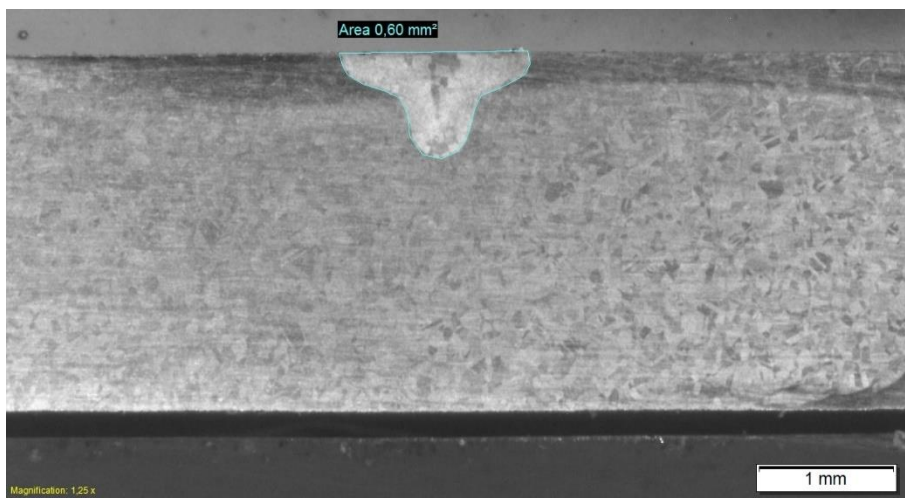
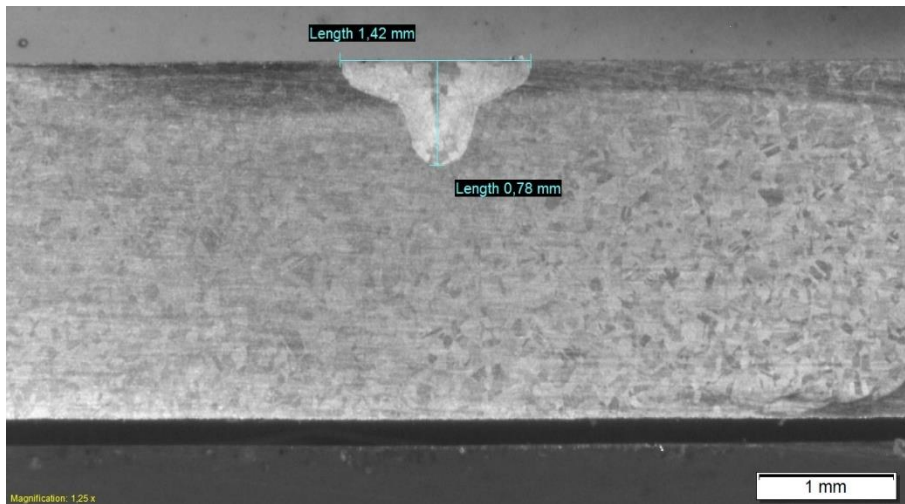
2.50.2.



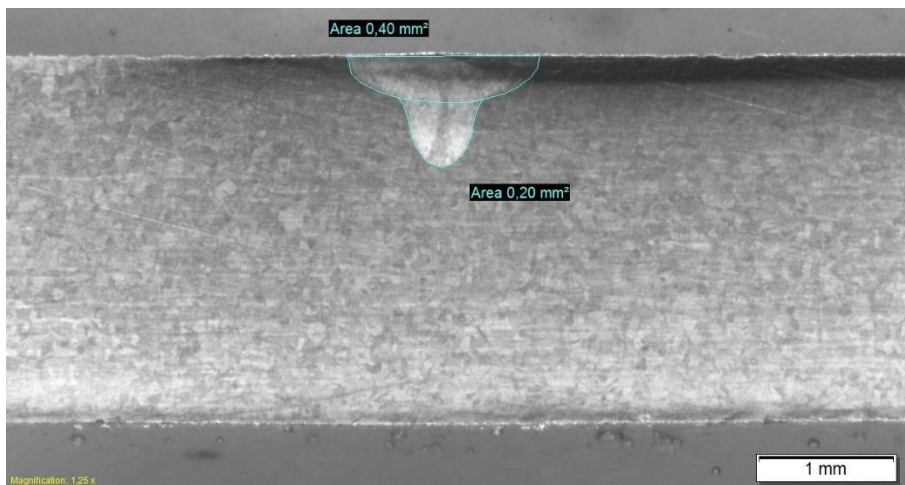
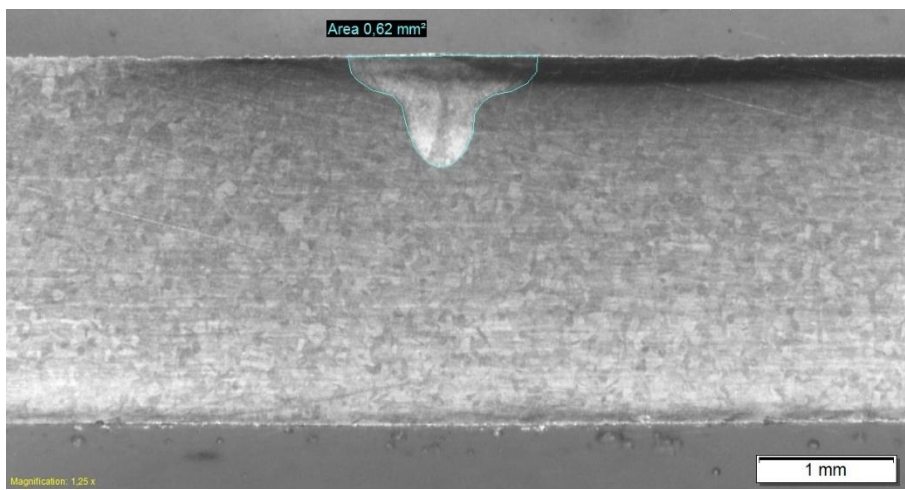
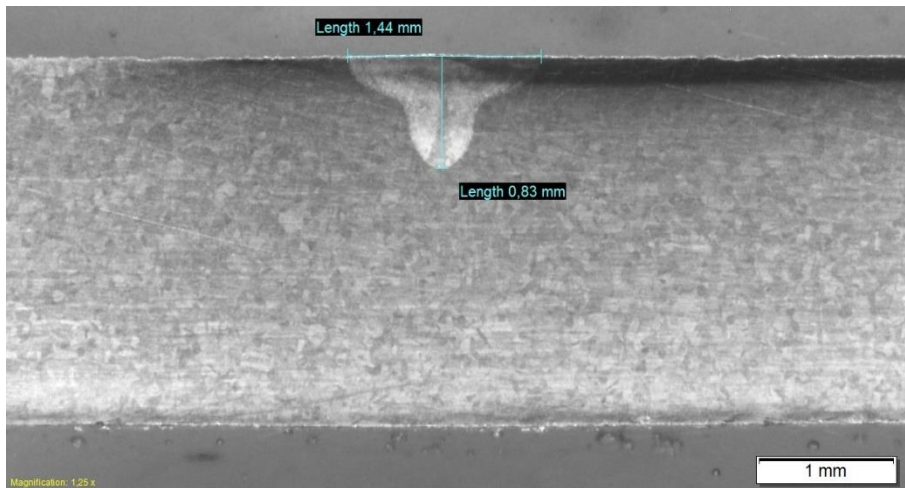
2.40.1.



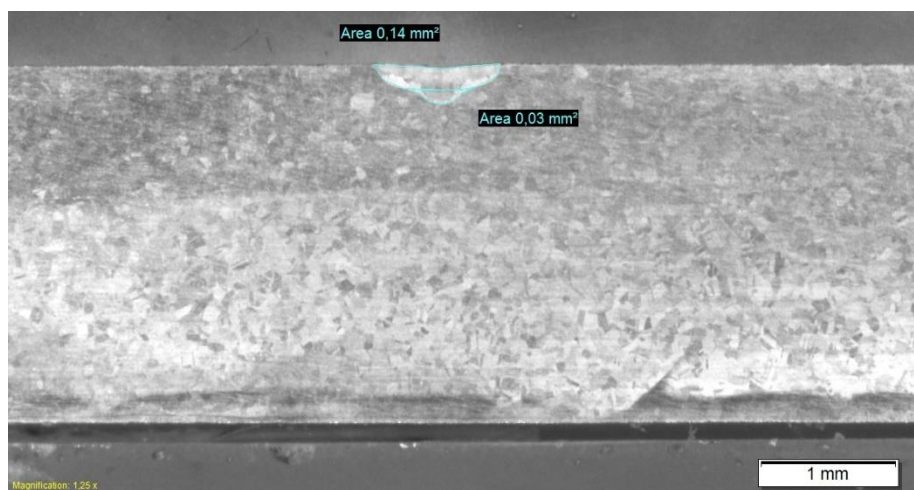
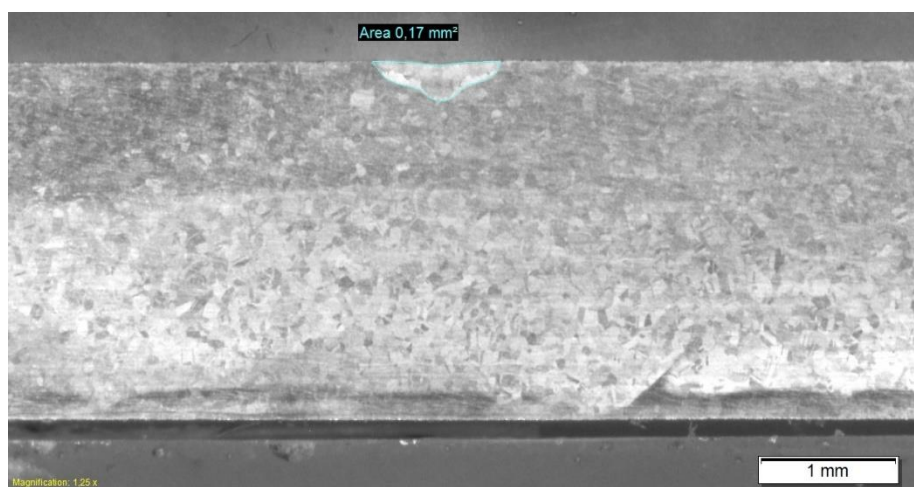
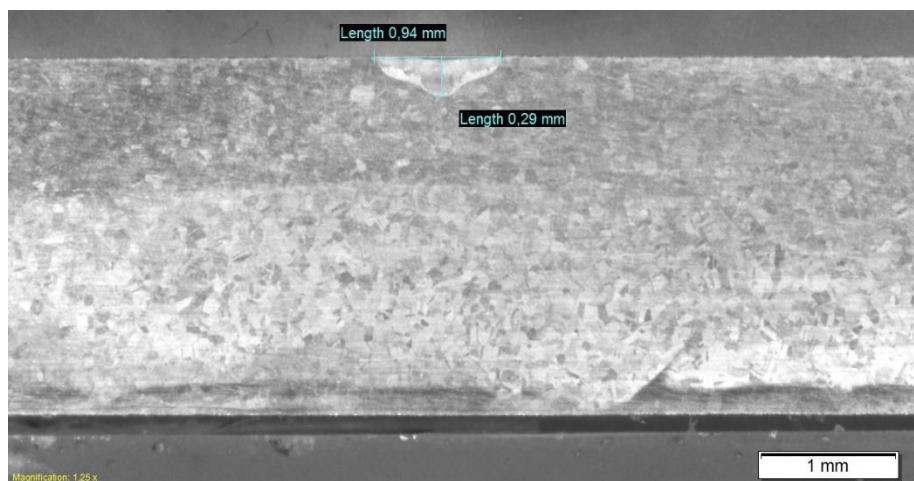
2.40.2.



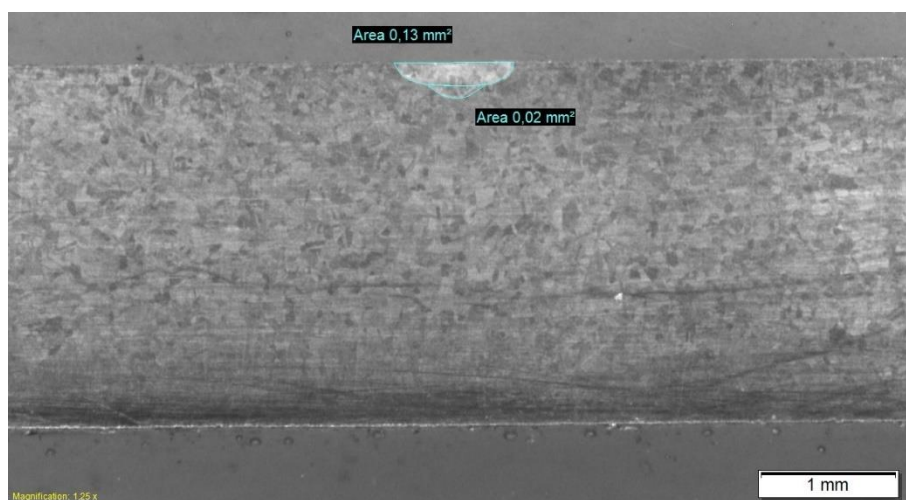
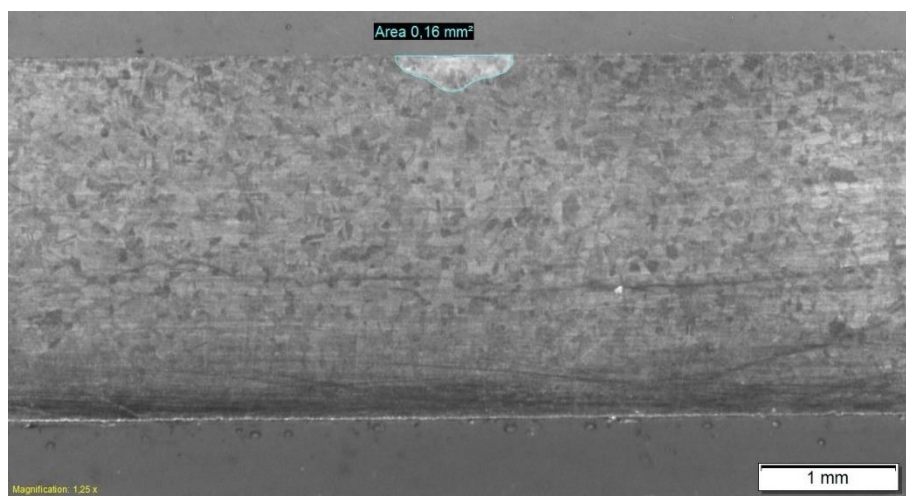
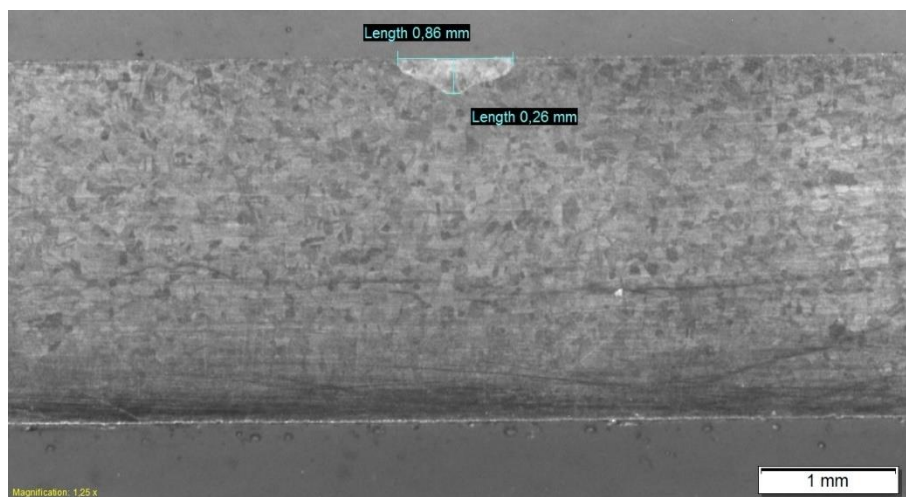
2.30.1.



2.30.2.



2.20.1.



2.20.2.