

## Welding parameters for hand welding

Based on DVS 2207-3

Welding Process	Materials	Abbreviations	Hot gas temperature <sup>1)</sup> °C	Hot gas volume flow <sup>2)</sup> l/min	Welding speed <sup>3)</sup> mm/min	Welding force (N) with wire ø	
						3mm	4mm
Free hand welding (WF)	High-density polyethylene	PE-HD <sup>4)</sup>	300 ... 320	40 ... 50	70 ... 90	8 ... 10	20 ... 25
	Polypropylene, Types 1, 2, 3	PP-H; PP-B; PP-R	305 ... 315	40 ... 50	60 ... 85	8 ... 10	20 ... 25
	Unplasticised polyvinyl chloride	PVC-U	330 ... 350	40 ... 50	110 ... 170	8 ... 10	20 ... 25
	Chlorinated polyvinyl chloride	PVC-C	340 ... 360	40 ... 50	55 ... 85	15 ... 20	20 ... 25
	Polyvinylidene fluoride	PVDF	350 ... 370	40 ... 50	45 ... 50	15 ... 20	25 ... 30
	Acrylonitrile butadiene styrene	ABS <sup>6)</sup>	350	N/A	N/A	N/A	N/A
	Polycarbonate	PC <sup>6)</sup>	350	N/A	N/A	N/A	N/A
	Polyamide	PA <sup>6)</sup>	400	N/A	N/A	N/A	N/A
	Polybutylene terephthalate	PBT <sup>6)</sup>	350	N/A	N/A	N/A	N/A
	Low-density polyethylene	PE-LD <sup>6)</sup>	270	N/A	N/A	N/A	N/A
	Polyurethane	PUR (Thermoplast) <sup>6)</sup>	300	N/A	N/A	N/A	N/A
	XENOY	XENOY PC/PBTB <sup>6)</sup>	350	N/A	N/A	N/A	N/A
	Plasticised polyvinyl chloride	PVC-P <sup>6)</sup>	350	N/A	N/A	N/A	N/A
	Polyethylene terephthalate glycol-modified	PETG <sup>6)</sup>	200 ... 215	N/A	N/A	N/A	N/A
Draw welding (WZ)	Polyvinyl chloride	PE-HD	300 ... 340	45 ... 55	250 ... 350	15 ... 20	25 ... 35
	Polypropylene, Types 1, 2, 3	PP-H; PP-B; PP-R	300 ... 340	45 ... 55	250 ... 350	15 ... 20	25 ... 35
	Unplasticised polyvinyl chloride	PVC-U	350 ... 370	45 ... 55	250 ... 350	15 ... 20	25 ... 35
	Chlorinated polyvinyl chloride	PVC-C	370 ... 390	45 ... 55	180 ... 220	15 ... 25	30 ... 35
	Polyvinylidene fluoride	PVDF	365 ... 385	45 ... 55	200 ... 250	15 ... 25	30 ... 35
	Ethylene Chloro Tri Fluoro Ethylene	E/CTFE <sup>5)</sup>	350 ... 380 <sup>5)</sup>	50 ... 60 <sup>5)</sup>	220 ... 250	10 ... 15	N/A
	Fluorinated ethylene propylene	FEP	380 ... 390	50 ... 60	60 ... 80	10 ... 15	N/A
	Tetrafluorethylen Perfluormethylvinylether	MFA	395 ... 405	50 ... 60	60 ... 80	10 ... 15	N/A
	Perfluoroalkoxy alkanes	PFA	400 ... 410	50 ... 60	70	10 ... 15	N/A

<sup>1)</sup> Measured 5mm in the nozzle, in the centre of the nozzle opening.

<sup>2)</sup> Drawn-in cold air volume at the ambient pressure.

<sup>3)</sup> Depending on the welding filler material diameter and the welding groove geometry.

<sup>4)</sup> PE 63, PE 80, PE 100

<sup>5)</sup> Nitrogene recommended

<sup>6)</sup> LEISTER empiric parameters

Please note:

The indicated welding parameter may vary depending on the ambient temperature and the material configuration.

Test welds need to be done and the parameter aligned accordingly! Leister takes no responsibility for poor quality welding!