

I Plant and equipment for joining, surfacing and cutting processes

1 Plant and equipment, including automation, mechanization and industrial robots, for the welding of metal, ceramic and composite materials

10	Flash welding
20	Stud welding
30	Projection welding
40	Diffusion welding
50	Electroslag welding
60	Electron beam welding
70	Electroslag welding
80	Narrow gap welding
90	Tubular wire welding
100	Flux cored arc welding
110	Gas pressure welding
120	Gas welding
130	Thermit welding
140	Induction welding
150	Cold pressure welding
160	Enclosed resistance fusion welding
170	Capacitor discharge welding
180	Laser welding
190	Manual metal arc welding
200	Pulsed arc welding
210	Light beam welding
220	Linear friction welding, Friction stir Welding
230	Magnetic pulse welding
240	Multiple-wire welding
250	MIG/MAG (GMA) welding
260	Microwelding
270	Plasma-TIG welding
280	Plasma welding
290	Resistance butt welding
300	Seam welding
310	Butt seam welding with rotary transformer
320	Friction stir welding
330	Explosive welding
340	Butt seam welding with sliding contacts
350	Magnetically impelled arc butt (MIAB) welding
360	Tandem welding
370	Ultrasonic welding
380	Firecracker welding
390	Submerged arc welding
400	Roll butt seam welding
410	Resistance spot welding
420	TIG (GTA) welding

2 Plant and equipment, including automation, mechanization and industrial robots, for weld surfacing and cladding

430	Additive manufacturing
440	Electroslag cladding
450	Laser cladding
460	Plasma cladding
470	Friction cladding
480	Explosive and roll cladding
490	Gas shielded arc cladding
500	Submerged arc cladding

3 Plant and equipment, including automation, mechanization and industrial robots, for brazing and soldering

510	Surfacing by brazing and soldering
520	Hot bar reflow soldering
530	Electron beam brazing
540	Debrazing, desoldering
550	Flame brazing and soldering
560	High-temperature brazing
570	Induction brazing and soldering
580	Bit soldering, block brazing, roller tinning
590	Laser beam brazing
600	Arc brazing

610	Light beam brazing and soldering
620	Bath, wave and drag soldering
630	Microbrazing and soldering
640	Furnace brazing and soldering
650	Friction soldering
660	Salt bath brazing
670	Wave soldering
680	Wave Soldering
690	Dip brazing and soldering
700	Ultrasonic soldering
710	Hot gas soldering
720	Resistance brazing
730	Reflow soldering

4 Plant and equipment, including automation, mechanization and industrial robots, for the welding of plastics

740	Extrusion welding
750	Heated tool welding
760	High frequency welding of plastics
770	Infrared-welding
780	Laser welding of plastics
790	Light beam welding of plastics
800	Friction welding of plastics
810	Rotational friction welding
820	Ultrasonic welding of plastics
830	Vibration welding of plastics
840	Hot gas welding of plastics

5 Plant and equipment and joining elements, including automation, mechanization and industrial robots, for positive and non-positive joining

850	Flanging
860	Wire netting, wire weaving
870	Tamp joining
880	Hanging, expanding, clamping, wedging, extending
890	Seaming
900	Joining by extrusion or drawing
910	Joining by forming
920	Joining by lockforming (lockseaming)
930	Joining by compression or squeezing
940	Joining by widening or tightening (rolling in of tubes, botting, beading)
950	Joining by winding
960	Stapeling (using by wirestaples)
970	Riveting
980	Pressure joining (press-fitting, shrink-fitting, expansion-fitting)
990	Screwing
1000	Joining elements (rivets, tubular rivets, tap rivets, pop rivets, blind rivet nuts, bolts, screws)

6 Plant and equipment, including automation, mechanization and industrial robots, for special applications

1010	Torch cleaning, automatic torch cleaning systems
1020	Systems for feeding, positioning, tipping or conveying (e.g. nut feeding systems)
1030	Production equipment and production lines
1040	Orbital welding equipment
1050	Stack cutting
1060	Repair welding and cutting
1063	Welding trainer
1070	Underwater cutting
1080	Underwater welding
1090	Welding, brazing, soldering and thermal cutting and surfacing in aerospace applications

7 Services

1091	Leasing of welding plant and welding Equipment
1092	leasing of welding manipulators

II Plant and equipment for heat treatment and other production processes

1 Plant and equipment, including automation, mechanization and industrial robots, for heat treatment

1100	Diffusion annealing
1110	Flame stress relieving
1120	Flame straightening
1130	Flame heating
1140	Hardening, tempering, annealing
1150	Induction heating
1160	Normalizing
1170	Furnace heating
1180	Stress relief annealing
1190	Soft annealing
1200	Resistance heating

2 Plant and equipment, including automation, mechanization and industrial robots, for other production processes

1210	Bending, pipe bending
1220	Millining, compressing, drawing
1230	Drilling
1240	Turning, milling, planing
1250	Edge preparation (e.g. plate and pipe chamfering machines)
1260	Casting
1270	Surface preparation and finishing
1280	Polishing
1290	Cold dressing
1300	Sawing
1310	Sintering and hot isostatic pressing
1320	Grinding
1330	Cutting (e.g. plate shearing), slamping, nibbling
1340	Welding conditioning
1345	Impact treatment
1350	Blasting
1360	Vibratory stress relieving
1370	Pumping

3 Workshop and workplace equipment, safety equipment

1380	Slinging gear, cranes and elevators (crane systems, lifting forks and beams, slewing cranes, lifting magnets, electric chain hoists)
1390	Work tables (e.g. welding and cutting tables)
1400	Heat recovery systems
1410	Load turning devices
1420	Transparent/opaque screens
1430	Soldering fume filters
1440	Machine protection gates
1450	At-source welding fume extraction systems (stationary, mobile)
1460	Sound absorbing materials, soundproof chambers
1470	Safety device for industrial robots (e.g. door locking systems, control boards, visual supervision systems)
1480	Welding booths
1490	Welding curtains
1500	Protective screens
1510	Weld fume filters and filtration systems
1520	Protection devices against fires and explosions
1530	Protection equipment against high energy radiation (e.g. X-rays, laser radiation)
1540	Stationary vacuum cleaners for industrial use
1550	Exhaust and ventilation systems
1560	Work benches, workshop lockers
1570	Workshop stools, aids to stability
1580	Workshop trolleys, cylinder trolleys
1590	Tools

1600	Other protective and safety devices (e.g. signs warning against possible Hazards, fire extinguishers, fire blankets)				
4	Health and safety (personal protective equipment)				
1610	Respiratory protection (filters-, insulating devices)				
1620	First aid equipment, medicines				
1630	Externally ventilated welding helmets				
1640	Ear protection (wadding, ear plugs, ear muffs)				
1650	Laser protection				
1660	Protective clothing (helmets, aprons, garments, shoes, gloves)				
1670	Welder's head screens and shields, protective goggles, eye protective filters				
1680	Other protective equipment				
5	General accessories				
1690	Equalizing systems (e.g. for spot welding guns)				
1700	Weld backings and adhesive tapes (for one sided welding)				
1710	Torch-neck changing systems				
1720	Torch and welding head manipulation systems				
1730	Controlled feeding devices (e.g. for adhesives, solders and powders)				
1740	Wire-guide spiral				
1750	Wire feeders				
1760	Turntables and tilt-turn positioners, lift tables				
1770	Pressure cylinders for pressure and resistance welding				
1780	Workpiece storage equipment (belts, pallets, stores)				
1790	Resistance welding electrodes				
1800	Materials for resistance welding electrodes				
1810	TIG (GTA) welding electrodes				
1820	Electrode holders				
1830	Electrode grinding devices				
1840	Gas lighters				
1850	Globoidal drive				
1860	Clamps (terminals, earthing, workpiece) and polarity testers				
1870	Cooling systems				
1880	Magnetic valves				
1890	Water-, oil-, air-cooler				
1900	Magnets for welding, magnetic handling equipment				
1910	Assembly systems, assembling and positioning devices (clamps, roller blocks, line-up clamps)				
1920	Plasma valves				
1930	Spot welding guns				
1940	Robot holding bracket				
1950	Chipping hammers and wire brushes				
1960	Hoses, hose couplings, hose connections, hose packages				
1970	Hose press				
1980	Welding-sets, diesel or gasoline driven				
1990	Filler, wire spools				
2000	Welding flux feeding and recovery devices				
2010	Welding mirrors				
2020	Welding leads and connectors				
2030	Secondary cables for resistance welding				
2040	Clamping systems, clamping elements				
2050	Steel-wire brushes and hand brushes for welds				
2060	Drying cabinets (electrodes and fluxes), heated quivers, baking ovens				
2070	Workpiece handling systems (lift and shift systems, dial tables) other accessories, pumps and other auxiliary equipment				
2080	Tool changing systems				
2090	Tools for joint preparation				
2100	Other accessories, pumps and other auxiliary equipment				
6	Gas supply accessories				
2110	Gas sources/tanks with pipework and valves (storage tanks, tankers, containers, cylinder racks and batteries, individual cylinders)				
2120	Central switching, pressure regulating and safety units, gas mixing units and valves for supply pipework (switching, pressure regulating and safety devices, valves, gas filters, gas flow and pressure meters)				
2130	Equipment for gas take-off stations (stop valves, pressure regulators, gas mixers, safety devices, take-off boards)				
2140	Individual cylinders (pressure reducers and anti-flashback and backflow devices)				
2150	Special equipment and general accessories (automatic switching and pressure control systems, gas analyzers, pipe identification stickers, clamps etc.)				
7	Filler materials for welding and coating specific materials (classified by material groups)				
2160	Filler materials for high alloy steels				
2170	Filler materials for high alloy cast steels				
2180	Filler materials for plastics				
2190	Filler materials for non-ferrous metals and alloys				
2200	Filler materials for unalloyed and low alloy steels				
2210	Filler materials for unalloyed and low alloy cast steels				
2220	Filler materials for wear and corrosion resisting deposits				
2230	Filler materials for underwater welding				
2240	Filler materials for other materials				
8	Filler materials for welding, cutting and coating (classified by types)				
2250	Wires, strips and plates for submerged arc and electroslag welding				
2260	Wires and strips for micro welding				
2270	Wire electrodes for gas metal-arc welding				
2280	Flux cored wires and strips				
2290	Tubular stick electrodes				
2295	Metal powder for welding, coating and additive finishing as well as cored wire and rod electrode manufacture				
2300	Welding fluxes				
2310	Gas welding rods				
2320	TIG (GTA) welding rods				
2330	Gouging and thermal cutting electrodes				
2340	Underwater welding and cutting electrodes				
2350	Thermit welding materials				
2360	Covered electrodes (manual metal arc welding)				
2370	Filler materials for laser beam welding				
9	Filler materials for thermal spraying (classified by composition)				
2380	Carbide powders				
2390	Ceramic powders (metal oxides/nitrides)				
2400	Metal powders and wires				
2410	Powder mixtures				
2420	Suspensions				
2430	Thermoplastics				
10	Filler materials for thermal spraying (classified by process and type of spray material)				
2440	Filler materials for flame spraying (wires, rods, powders)				
2450	Filler materials for arc spraying(wires)				
2460	Filler materials for plasma spraying (powders)				
2470	Filler materials for molten metal spraying				
2480	Filler materials for HVOF-spraying (powder)				
2490	Filler materials for coldgas spraying (powder)				
2500	Filler materials for suspension spraying (suspension)				
11	Solders (classified by composition)				
2510	Lead-tin solders				
2520	Solders for aluminium				
2530	Tin-lead solders with or without Cu, Ag, P additions				
2540	Leadfree solders				
2550	Other solders				
12	Brazing fillers (classified by composition)				
2560	Aluminium brazing fillers				
2570	Gold containing brazing fillers				
2580	Copper/brass brazing fillers				
2590	Nickel base brazing fillers				
2600	Palladium containing brazing fillers				
2610	Phosphorus containing brazing fillers				
2620	Platinum containing brazing fillers				
2630	Silver brazing fillers				
2640	Special brazing fillers (cobalt, titanium, zirconium base)				
2650	Other brazing fillers				
13	Forms of solders and brazing filler				
2660	Flux cored rods				
2670	Flux coated rods				
2680	Brazing and soldering wires, rods and strips				
2690	Preforms and foils				
2700	Brazing and soldering pastes				
2710	Filler precoated plates				
2720	Brazing and soldering powders				
2730	Stranded rods				
III	Plant equipment, including automation, mechanization and industrial robots, for thermal cutting and erosion				
1	Plant equipment, including automation, mechanization and industrial robots, for thermal cutting and erosion				
2740	Oxy-fuel gas cutting				
2750	Oxygen lancing				
2760	Flame scarfing				
2770	Flame gouging				
2780	Spark erosion and chemical machining				
2790	Flame cleaning				
2800	Carbon arc cutting				
2810	Laser beam cutting and drilling, electron beam drilling				
2820	Air arc gouging				
2830	Arc-oxygen cutting				
2840	Flame and fusion cutting with metal or mineral powder				
2850	Plasma scarfing				
2860	Plasma cutting				
2870	Water jet cutting, water abrasive jet cutting				
2	Plant for production of filler materials				
2880	Acetylene generators and filling stations				
2890	Conveying systems				
2900	Gas manufacturing and liquefying plants				

3 *Plant for production of consumables*

- 2910 Brazing filler and solder production plants
- 2920 Welding wire production plants
- 2930 Welding electrode and flux cored wire production plants
- 2940 Welding flux production plants

IV **General productions equipment for automation**

1 *General productions equipment, systems for computer aided manufacture, data processing, manual and automatic control engineering*

- 2950 CAD, CAM, CAQ, CIM and CAP systems
- 2960 Capture, checking and processing of process and production parameters
- 2970 Industrial plant
- 2980 Camera systems for monitoring design and production processes
- 2990 Seam tracking and welding head guidance systems
- 3000 Optics for laser beam welding and/or cutting
- 3010 Programs (software)
- 3020 Computers and other hardware (mini and micro-computers, PCs, mainframes, process computers, printers, plotters, processors, etc.)
- 3030 Mass production, flexible production facilities and welding lines
- 3040 Control engineering (pressure switches, solenoid and plasma valves, etc.)

2 *Adhesives*

- 3050 Epoxy resins (1C, 2C)
- 3060 Polyurethanes (1C, 2C)
- 3070 Reactive hotmelts
- 3080 Cyanoacrylates
- 3090 Anaerobically curing adhesives
- 3100 Curing on demand via UV radiation
- 3110 Silan netted polymer adhesives
- 3120 Phenol-formaldehyde resol adhesives
- 3130 Pressure sensitive adhesives
- 3140 Acrylate adhesives
- 3150 Silicones
- 3160 MS-polymers
- 3170 Structural pressure sensitive adhesives (PSA)

3 *Adhesive application*

- 3180 Cartridges
- 3190 Application systems
- 3200 Automatisation
- 3210 Control system adhesive application
- 3220 Metering appliances
- 3230 Supply/Metering pumps
- 3240 Mixers (dynamic, static)

4 *Surface treatment*

- 3250 Solvent containing systems
- 3260 Mechanical processes (grinding, blasting)
- 3270 Water based systems (neutral, acid, alkaline)
- 3280 Wet chemical processes (etching, phosphatating, anodizing, others)
- 3290 Dry chemical processes (silicoater, low pressure plasma, atmospheric pressure plasma, others)
- 3300 Primer/Adhesion promoters

5 *Consulting*

- 3310 Adhesive selection

- 3320 Design in adhesive bonding
- 3330 Characterisation of adhesives
- 3340 Quality management
- 3350 Auditing of processes
- 3360 Auditing of companies
- 3370 Plant construction (Plasma equipment)
- 3380 Paint/lacquer technology
- 3390 Fibre reinforced plastic technology
- 3400 Adhesive application
- 3410 Integration into the production (production planning)
- 3420 Health and safety
- 3430 Surface analysis
- 3440 Adhesive development
- 3450 Electrochemistry/corrosion
- 3460 Testing of materials and components
- 3470 Simulation and calculation of adhesive bonded joints

6 *Research and development*

- 3480 Adhesive selection
- 3490 Design in adhesive bonding
- 3500 Characterisation of adhesives
- 3510 Plant construction (plasma equipment)
- 3520 Paint/lacquer technology
- 3530 Fibre reinforced plastic technology
- 3540 Adhesive application
- 3550 Integration into the production (production planning)
- 3560 Surface analysis
- 3570 Molecular modelling
- 3580 Adhesive development
- 3590 Electrochemistry/corrosion
- 3600 Testing of materials and components
- 3610 Simulation and calculation of adhesive bonded joints

7 *Workforce qualification*

- 3620 European Adhesive Bonder (EAB)
- 3630 European Adhesive Specialist (EAS)
- 3640 European Adhesive Engineer (EAE)
- 3650 Fiber Composite Assembler

8 *Others*

- 3660 Specialist printer
- 3670 Technology broker
- 3680 Certification body of the Federal Railway Authority

9 *Gases*

- 3690 Fuel gases (acetylene, butane, natural gas, methane)
- 3700 Active gas
- 3710 Doping and test gas
- 3720 Compressed air
- 3730 Liquid gas
- 3740 Hydrogen-nitrogen mixture
- 3750 Inert gases (argon, neon, helium)
- 3760 Carbon dioxide
- 3761 lasing gas
- 3762 gas for laser welding and cutting processes
- 3770 Gas mixtures
- 3780 Oxygen
- 3790 Nitrogen
- 3800 Hydrogen

10 *Other consumables*

- 3810 Asbestos substitutes
- 3820 (weld) backing
- 3830 Pickling pastes
- 3840 Calcium carbide
- 3850 Leak-test materials
- 3860 Anti-spatter compounds

- 3870 Electro-burnish chemicals
- 3880 Paints and varnishes
- 3890 Brazing and soldering fluxes
- 3900 Auxiliary materials for thermit welding
- 3910 Heat protection equipment for welding work
- 3920 Impregnating compounds
- 3930 Ceramic performs
- 3940 Ceramic powders
- 3950 Solvents
- 3960 Solder masks and resists
- 3970 Surface cleaner
- 3980 Deadener
- 3990 Cleaning agents
- 4000 Raw materials for electrode coatings
- 4010 Anti-rust compounds
- 4020 Oxygen and powder lances
- 4030 Marking paints
- 4040 Explosives
- 4050 Lubricants
- 4060 Cutting powders for concrete, cast iron and other materials
- 4070 Chalk
- 4080 Weld primers
- 4090 Weld cleaning
- 4100 Sprays, technical
- 4110 Abrasives
- 4120 Cutting and snagging wheels

11 *Measurement and sensor technology*

- 4130 Chemical analysis
- 4140 Elongation, path and angle measurement
- 4150 Throughput and flow-rate measurement
- 4160 Scanning electron microscopes
- 4170 Ferrite-content measuring devices
- 4180 Photography and cinematography
- 4190 Speed and rotational-speed measurement
- 4200 Manual and miscellaneous measuring devices for arc welding (current, voltage, wire-feed rate, gas-feed rate, welding speed and energy per unit length)
- 4210 Holography
- 4220 Calibration
- 4230 Capacitance and inductance measurement
- 4240 Force measuring systems
- 4250 Gauges and weld gauges
- 4260 Power measurement
- 4270 Mass, density, force, torque and pressure measurement
- 4280 Measuring devices for gases, fumes and dusts
- 4290 Measuring devices for sound/noise
- 4300 Measuring devices for radiation
- 4310 Measuring devices for resistance welding (pulses, periods, current and voltage) and Rogovski belts
- 4320 Measuring and monitoring devices for the electrode-penetration depth in resistance welding
- 4330 Microscopy
- 4340 Surface quality (cut-surface quality)
- 4350 Specimen-preparation installations
- 4360 Roughness measurement of surfaces / roughness depths
- 4370 Coat-thickness, wall-thickness and crack-depth measurement
- 4380 Sensor technology
- 4390 Miscellaneous measurement technology and measuring devices
- 4400 Photoelasticity
- 4410 Current and voltage measurement
- 4420 Temperature measurement (optical, electrical, chemical and mechanical)
- 4430 Thermography
- 4440 Monitoring devices for arc welding
- 4450 Monitoring devices for resistance welding
- 4460 Hydrogen determination
- 4470 Resistance and insulation measurement
- 4480 Time, event-number and frequency measurement

12 *Testing Technology – Non-Destructive Testing*

- 4490 Acoustic measuring devices

4500	Acoustic microscopy	5250	Physical tests	5920	Static fracture testing (longitudinal-weld bend, bursting, deep-notch, bend, notched-bar bend, notched-bar tensile and wide-plate tests)
4510	Analysis devices	5260	Testing documentation	5930	Universal testing facilities
4520	Atomic-absorption spectrometers	5270	Testing machines	5940	Creep rupture and fatigue-endurance strength testing and vibration-fatigue testing installations
4530	Auger probes	5280	Testing agents for magnetic-powder testing	5950	Tensile, pressure, torsion and bend testing
4540	Automation and computer assistance for non-destructive testing	5290	Testing-agent monitoring		
4550	Automatic testing systems	5300	Testing of welded joints		
4560	Automation in measurement and testing technology	5310	Quality control		
4561	Determination and testing of products, joining processes and fabrication operations	5320	Quality planning	14	Testing Technology – Materials Testing
4562	consultancy and planning of fabrication and application of materials, energy and processes	5330	Quality assurance in process monitoring	5960	Plant monitoring and production monitoring
4570	Betatron and linear accelerators	5340	Quality assurance in repair/maintenance	5970	Parameter determination
4580	Image-processing installations	5350	Quality assurance in series production	5980	Quality and defect testing
4590	Image intensifiers	5360	Radioactive materials	5990	Environmental-protection tests
4600	CAQ	5370	Radiography	6000	Properties to be tested
4610	CCD cameras	5380	X-ray film	6010	Materials to be tested
4620	CIM	5390	X-ray apparatus	6020	Components to be tested (areas of application)
4630	Computerised tomography	5400	X-ray diffractometers		
4640	Elongation and stress determination methods	5410	X-ray-film viewers		
4650	Elongation gauges	5420	X-ray fluorescence analysis		
4660	Densitometers Leak-testing installations and devices	5430	X-ray tubes		
4670	Leak testing	5440	X-ray carriages		
4680	Thickness measuring devices	5450	X-ray accessories		
4690	Dose and dose-rate measuring devices	5460	Scanners		
4700	Darkroom facilities	5470	Damage analysis	15	Testing Technology – Testing Procedures/ Testing Facilities
4710	Radiographic testing	5480	Acoustic-emission analysis	6030	Component testing / design testing
4720	Real-time radiographic systems	5490	Acoustic-emission devices	6040	Fracture-mechanical parameters
4730	Borescope	5500	Coat-thickness measuring devices	6050	Chemical tests
4740	Residual-stress measuring devices	5510	Supervision of welding and fabrication operations, on site and in-plant	6060	Strength and toughness
4750	Penetration testing installations	5520	Weld testing	6070	Structural investigations
4760	Electrical testing	5530	Vibration measurement	6080	Resources for metallography (etching agents, polishing agents and embedding compounds)
4770	Electrodynamical testing	5540	Safety technology	6090	Mechanical testing procedures
4780	Scanning electron microscopy	5550	Visual inspection	6100	Physical tests
4790	Electronic measuring devices	5560	Signal and image processing	6110	Weldability tests
4800	Demagnetization installations	5570	Computational Modeling/Simulation	6120	Technological testing procedures
4810	Dye penetrants	5580	Software packages		
4820	Dye-penetration testing	5590	Miscellaneous non-destructive testing procedures		
4830	Color measuring devices	5600	Spectral analysis	16	Quality Assurance (According to Masing's "QA Manual")
4840	Field-strength measuring devices	5610	Spectral-analysis devices	6130	A+F in QM
4850	Production measuring devices	5620	Spectral photometers	6140	Bilatrometry
4860	Production monitoring	5630	Spectrometers	6150	Ergonomics of workplaces
4870	Configuration measuring devices	5640	Radiation measuring devices	6160	Instructions for use
4880	Photographic devices	5650	Radiation-protection measuring devices, components and materials	6170	Mathematics, statistics and computers
4890	Filling-level measuring devices	5660	Control systems	6180	Measurement technology
4900	Structural testing	5670	Stray-flux testing devices	6190	Organization for QA and insurance policies
4905	Design and analysis of welded structures	5680	Temperature measuring devices	6200	Quality planning and assessment
4910	Gammagraphic devices	5690	Thermal analysis	6210	Quality assurance in packing, storage and transport
4920	Hardness testing	5700	Thermal testing	6220	Quality assurance in small and medium-sized businesses and in skilled trades
4930	ICP spectrometers	5710	Thermographic installations	6230	Quality assurance of software
4940	Information systems	5720	Ultrasonic applications		
4950	Infrared measurement technology	5730	Ultrasonic testing devices and installations		
4960	Infrared thermography	5740	Ultrasonic testing		
4970	Calibration	5750	Ultrasonic cleaning installations		
4980	Parameter determination	5755	Ultrasonic transducers		
4990	Nuclear magnetic resonance	5760	ultraviolet lamps		
5000	Corrosion testing	5770	Wear tests / erosion tests		
5010	Laboratory quality assurance	5780	Confusion testing		
5020	Length measuring and testing devices	5790	Vibration analysis		
5030	Laminography	5800	Vibration installations and cameras		
5040	Laser-beam testing	5810	Thermal-conductivity measuring devices	17	Miscellaneous
5050	Laser technology	5820	Materials testing	6240	Training and education
5060	Leak detection	5830	Eddy-current testing	6250	Consultancy companies
5070	Light measuring devices	5840	Eddy-current testing devices and installations	6260	Data processing
5080	Light microscopy	5850	Non-destructive testing	6270	Service companies
5090	Magnetic powders		Accessories for testing facilities	6280	Trade journals / specialist books
5100	Magnetic-powder testing devices and installations	13	Testing Technology – Destructive Testing	6290	Research institutes
5110	Magnetic testing	5860	Dynamic fracture testing (Battelle, drop-weight, double-torsion, explosion-bulge, Esso notched-bar bend impact, notched-bar tensile impact, Niblink and Robertson tests)	6300	Information systems
5120	Manipulators	5870	Hardness testing	6310	Calculation systems
5130	Marking systems	5880	Resources, automation and computer assistance for destructive testing	6320	Societies and organizations
5140	Mathematics, statistics and computers	5890	Kic test and crack-opening displacement (COD) test	6330	Certification
5150	Measured-data collection	5900	Weldability testing (cold-cracking and hot-cracking testing and others)	V	Contract work and services for joining, separating and coating
5160	Measuring systems	5910	Miscellaneous and mechanical-technological tests	2	Sub-contracting – Processing of specific materials
5170	Metallography			7030	Aluminum
5180	Metallographic tests			7040	Free machining steels
5190	Microfocus x-ray installations			7050	Coated and plated materials
5200	Mobile spectrometers			7060	Concrete
5210	Neutron-beam testing			7070	Concrete reinforcing bars
5220	Surface testing devices				
5230	Optical testing				
5240	Penetration installations and penetrants				

7080 Lead, bismuth, cobalt, cadmium
 7090 Cermets
 7100 Chromium
 7110 Duplex steels
 7120 Thermosets
 7130 Elastomers
 7140 Fiber reinforced materials
 7150 Fine grained structural steels
 7160 Refractory materials
 7170 Glass
 7180 Cast iron
 7190 High alloy steels
 7200 High temperature materials
 7210 Ceramics
 7220 Carbon
 7230 Copper
 7240 Laminates
 7250 Leather
 7260 Magnesium
 7270 Brass
 7280 Nickel
 7290 Low alloy steels
 7300 Niobium, manganese
 7310 Cardboard, paper
 7320 Platinum, gold, silver
 7330 Compression moulding compounds (polymers)
 7340 Pipe steels
 7350 Rail steels
 7360 Shipbuilding steels
 7370 Sintered materials
 7380 Cast steel
 7390 Superalloys (hot isostatic pressure)
 7400 Thermoplastics
 7410 Titanium
 7420 Unalloyed steels
 7430 Tool steels
 7440 Weathering steels
 7450 Tungsten, tantalum, molybdenum
 7460 Tin, zinc
 7470 Zirconium, vanadium, beryllium
 7480 New materials (high strength, light weight const-
 ructions and superhard materials, nanomaterials,
 light and electricity conducting materials, mag-
 netic materials, implant materials etc.)

3 *Sub-contracting – Processing of speci- fic semi-finished products*

7490 Strip and wide strip
 7500 Reinforcing bars and mesh
 7510 Sheet, plate, checker plate, perforated plate
 7520 Wires
 7530 Springs
 7540 Foils, thin strip
 7550 Castings
 7560 Plastic films, strips, sheets
 7570 Plastic pipes, flanges and other plastic semi-fi-
 nished products
 7580 Plastic tubes and sleeving
 7590 Plastic products
 7600 Copper pipes
 7610 Brass pipes
 7620 Sections (girders)
 7630 Pipes and flanges
 7640 Circular blanks
 7650 Rails
 7660 Hoses (metal)
 7670 Forgings
 7680 Sintered parts
 7690 Extruded products

4 *Sub-contracting – Application of joining and other manufacturing processes*

7700 Flash welding
 7710 Surfacing
 7720 Pickling, sand blasting, polishing, deburring and/
 or grinding
 7730 Stud welding
 7740 Flame cleaning
 7750 Flame cutting blanks

7760 Spark erosion
 7770 Electron, laser beam welding
 7780 Electroslag welding
 7790 Gas pressure welding
 7800 Gas welding
 7810 Adhesive bonding of plastics
 7820 Adhesive bonding of metals
 7830 Welding of plastics
 7840 Plastic spraying
 7850 Laser beam welding and/or cutting
 7860 Manual metal arc welding
 7870 Brazing and soldering
 7880 Metallizing, dip coating and anodizing
 7890 Metal spraying
 7900 Oxidized ceramic spraying
 7910 Computational modeling of processes
 7920 Resistance spot and/or projection welding
 7930 Friction welding
 7940 Robot welding TIG/MIG/MAG
 7950 Seam welding
 7960 Friction stir welding
 7970 Gas shielded arc welding
 7980 Magnetically impelled arc butt welding (MIAB)
 7990 Computational modeling/Simulation of weld
 processes
 8000 Computational modeling/Simulation of structures
 8010 Thermal cutting
 8020 Ultrasonic welding
 8030 Firecracker, electrogas and/or submerged arc
 welding
 8040 Scrapping
 8050 Vibratory stress relieving
 8060 Heat treating and/or quenching and tempering
 8070 Maintenance, servicing, repair
 8080 Computational modeling of materials
 8085 waste containing precious metal

5 *Organizations, education and training, certification, research, information transfer, technical literature and regulations*

8090 Accreditation and certification organizations
 8100 Acceptance, approval, examination and supervi-
 sory organizations
 8110 Training, continuing education and examination of
 specialist personnel
 8120 Supervisory bodies, Chambers of Trade, Emplo-
 yers Associations
 8130 Technical publishers, Libraries (literature, codes
 of practice, educational films, software, CD-ROM
 and diskette services, audiovisual media)
 8140 Joining research and education
 8150 Consultants, experts
 8160 Information services (literature and factual data-
 base searches, expert systems, expert certifica-
 tion, literature appraisal, state of the art and trend
 analyses)
 8170 Codes of practice, standardization, patents (incl.
 organizations)
 8180 Technical and scientific associations, industrial
 associations

VI *Plant and equipment, including automation, mechanization and industrial robots, for thermal spraying*

1 *Plant and equipment, including auto- mation, mechanization and industrial robots, for thermal spraying*

6340 Flame spraying with wire or rod
 6350 Flame spraying with powder
 6360 Plastic Flame spraying
 6370 High-velocity oxy-fuel spraying (HVOF)
 6380 Detonation spraying
 6390 Plasma spraying

6400 Suspension spraying
 6410 Laser spraying
 6420 Arc spraying
 6430 Cold gas spraying
 6440 Plasma transfer arc welding (PTA)
 6450 Pressure & vacuum blasting
 6460 Masking compounds & tapes
 6470 Blasting media
 6480 Finishing tools/grinding wheels
 6490 Sand-blasting equipment
 6500 Sealants
 6510 Exhaust systems / bag houses
 6520 Automated spraying systems
 6530 Flow controller
 6540 Air compressors
 6550 Manipulators
 6560 Wet collectors
 6570 Testing equipment
 6580 Powder feeder
 6590 Robotics
 6600 Soundproof rooms
 6610 Spray booths
 6620 Other powders
 6630 Wires
 6640 Intermetallic powders
 6650 Carbide powders
 6660 Ceramic powders (metal oxides/nitrides)
 6670 Ceramic rods
 6680 Metal powders
 6690 Self Fluxing powders
 6700 Powder mixtures
 6710 Suspensions
 6720 Thermoplastics
 6730 Superfinishing
 6740 Grinding
 6750 Machining
 6760 Other
 6770 Education
 6780 Market research
 6790 Test coupons
 6800 Testing services / equipment / supplies
 6810 Virtual spraying
 6820 Atmospheric corrosion
 6830 Abradable applications
 6840 Electrical / electronics
 6850 Clearance control
 6860 High temperature corrosion
 6870 Reclamation
 6880 Vacuum plasma
 6890 Wear resistance
 6900 Thermal barrier
 6910 Aluminizing
 6920 Anodizing
 6930 CVD (chemical vapor deposition)
 6940 Electrolytic oxidation
 6950 Enameling
 6960 Painting, varnishing
 6970 Flame cleaning and phosphatising
 6980 Plastic coating
 6990 Metallizing
 7000 PVD (physical vapor deposition)
 7010 Dip coating
 7020 Tin, zinc, nickel, copper and chromium plating