RS Alloys
Optics

RSP Technology develops, produces and sells aluminium super alloys with high end properties. By using its own Meltspinning process, ultra fast cooling rates can be reached, converting more than 1 million degrees per second. As a result very fine nanostructured alloys with new functionalities are being developed and produced.

For the optical industry there are 3 main application areas:

1. Diamond machined mirrors

1a. By replacing conventional 6061 with RSA-6061, surface roughness can be improved by a factor of 4. RSA-6061 can be delivered under official qualifications EN-755 and ASTM-B221.

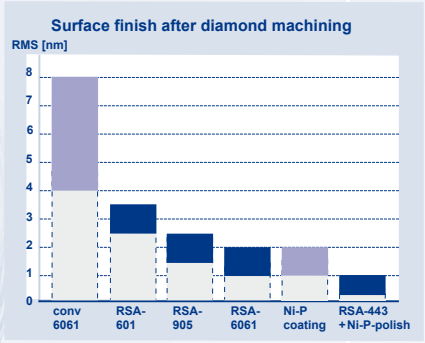
1b. If better properties are required, RSA-905 offers improved mechanical and physical properties.

2. Mould and insert applications

Better and cheaper than any other alternative:

RSA-905 offers huge advantages compared to conventional Cu-based alloys like brass, Cu-Ni and Cu-Be.

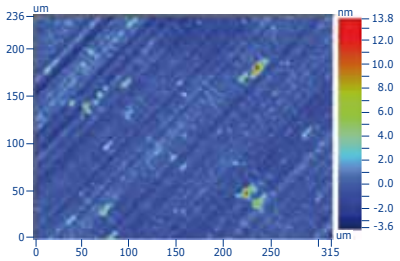
- simple logistics and low cost as no coating operation nor post machining is required.
- increase of mould life with about 100% compared with a Nickel coated surface.



3. Polished mirrors

3a. RSA-443 can be used as mirror body with high stiffness and low thermal expansion matching Nickel. So bi-metallic effects can be omitted if a polishable Ni-P coating is required for reaching RMS values < 1nm.

3b. RSA-905 is a polisheable aluminium alloy offering RMS values below 1nm (experimental stage).



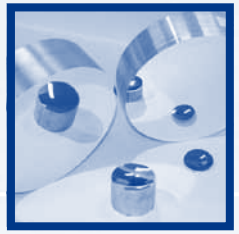
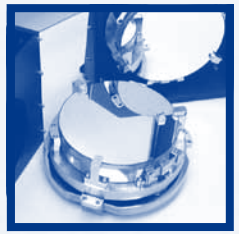
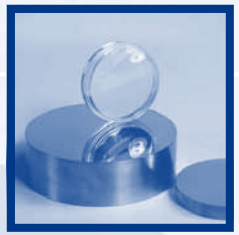
Surface statistics:

Ra : 0.65 nm
Rq : 0.93 nm
Rz : 13.23 nm
Rt : 17.39 nm

RSP alloys can be produced in the following standard dimensions:

- Bars: diameters 18, 22, 26, 35, 45, 60, 80, 110 mm
- Billets: diameters 200, 290, 400, up to 1.000 mm
- Any other size can be custom made in round, rectangular or any other shape up to 1.000 mm
- In co-operation with shareholder Hittech Group, RSP is able to make parts and assemblies according to customers specification.

			Physical properties					Mechanical properties			
Alloy	Condition	Typical composition	Density ρ [gr/cm³]	Thermal Expansion α [10⁻⁶/K]	Stiffness E-mod [Gpa]	Specific Stiffness [Gpa/(g/cc)]	Thermal Conductivity k [W/m.K]	Ultimate Tensile Strength UTS [Mpa]	Yield Strength YS [Mpa]	Elongation e [%]	Hardness [HB]
RSA-6061	T6	Al Si0,6 Cu0,3 Mg1,0 (AA6061)	2,70	23,0	70	26	160	330	300	14	110
RSA-443	AE	Al Si40	2,54	13,5	102	40	135	240	150	1,5	105
RSA-905	AE	Al Fe2,5 Ni5 Cu2,5 Mn1 Mo0,8 Zr0,8	2,95	19,0	90	31	115	600	475	7	180
AA-6061 (Conv.)	T6	Al Si0,6 Cu0,3 Mg1 (AA6061)	2,70	23,0	70	26	160	310	275	10	100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