COIL

ADDING VALUE TO ALUMINIUM

Independently certified audit of the long term on-site performance of continuously anodised aluminium panels on exterior architectural applications in Continental Europe

PURE ALUMINIUM

In 2002/3, Coil commissioned Dr. Laszlo Palffy, through his consultancy, Straditech, to jointly visit, with Coil technical staff, a number of buildings where continuously anodised panels had been extensively employed in the construction of the facade. Dr. Palffy has significant experience of the technology of anodising of aluminium.

The original specifications of the metal used in the building were required to be, in each case, fully traceable. All buildings were to have already acquired a significant service life. Dr. Palffy was mandated to certify the new on-site measurements of the anodic layer and other performance criteria of the buildings.

The purpose of this audit was to assess the real long term on-site performance of continuously anodised panels compared to accelerated laboratory testing on which earlier conclusions had been based.

Coil believes that these results are conclusive evidence that high quality anodising associated with a high quality metal substrate together provide the optimum protection and longevity to aluminium for external applications.

Established in 1972, only Coil, the world's largest architectural continuous anodiser, is capable of demonstrating a long term quality track record .


NOVOTEL

Address of building	COMPLEXE D'HOTEL NOVOTEL-IBIS 4,Boulevard de Neuilly 92081 PARIS-LA-DEFENSE, FRANCE
Date of independent inspection	July 2003
Use of building	Hotel
Date of construction	1983
Environment	High traffic density–business district of La Défense–Paris
Evidence of regular cleaning or maintenance	Yes, twice annually
External parts of building which were anodised	Panels – Cassettes
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

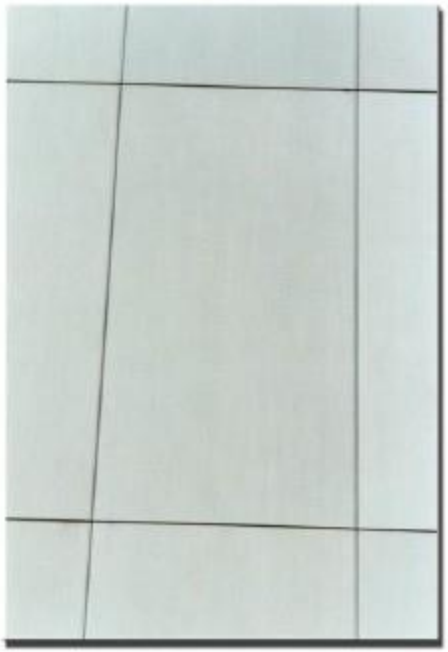
Visible signs of corrosion or surface degradation	None
Conclusion	After 20 years, no apparent corrosion and no reduction in anodic film despite high density urban environment

Address of building	LES ARCHIVES DEPARTEMENTALES DES HAUTS DE SEINE 137, avenue Joliot Curie, 92023 NANTERRE-FRANCE
Date of independent inspection	July 2002
Use of building	Public building
Date of construction	1978
Environment	Urban – High traffic density
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Vertical cassettes 3.4mx0.33m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)

Anodic film layer on date of independent inspection (microns)	18µm
Visible signs of corrosion or surface degradation	None
Conclusion	After 24 years, no apparent signs of corrosion and no reduction in anodic film despite high density urban environment.

Address of building	CENTRE EDF-GDF 4, avenue du Pacifique, ZA Courtaboeuf, 91940 LES ULIS FRANCE
Date of independent inspection	July 2002
Use of building	Offices
Date of construction	1982
Environment	Semi rural – semi industrial close to Orly Airport–subject to pollution due to kerosene vapours from over-flying
Evidence of regular cleaning or maintenance	None during the last 20years
External parts of building which were anodised	Panels – Cassettes-1.3mx0.6m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

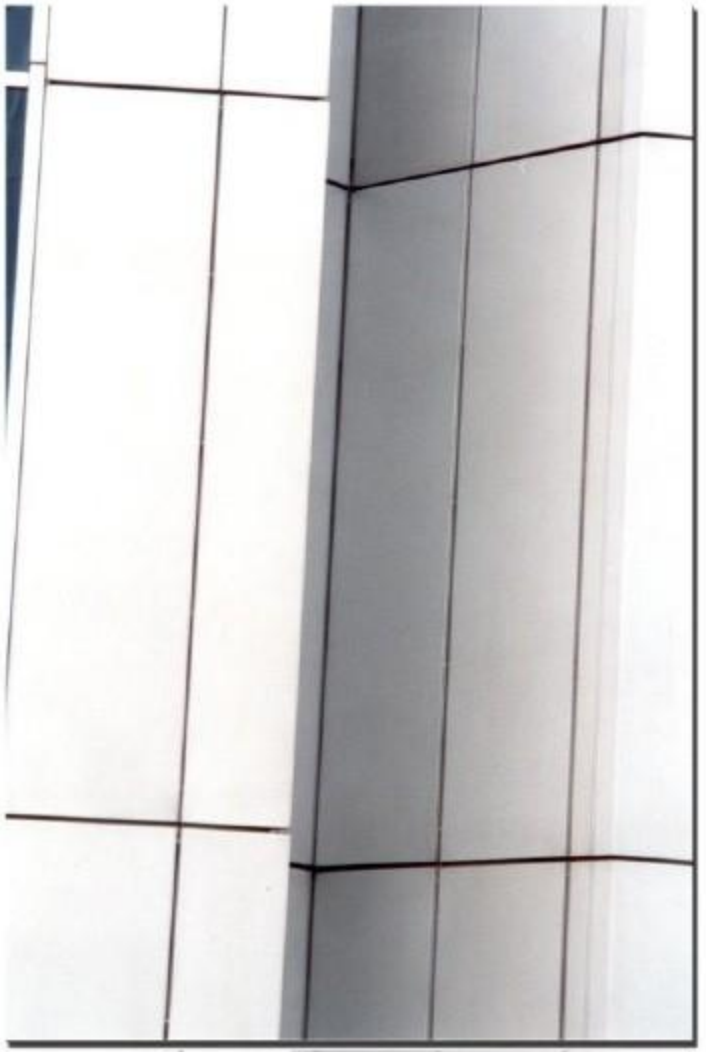
Visible signs of corrosion or surface degradation	None
Conclusion	After 20 years, no apparent signs of corrosion and no reduction in anodic film.




204

Address of building	LES BUREAUX DU PONT DE SEVRES 204, Pont de Sèvres 92510 BILLANCOURT-FRANCE
Date of independent inspection	July 2002
Use of building	Offices
Date of construction	1975
Environment	Urban – by Seine river–High traffic density
Evidence of regular cleaning or maintenance	None since construction
External parts of building which were anodised	Panels – Cassettes -2.7mx0.6m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	17µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 27 years, no apparent signs of corrosion and no reduction in anodic film despite high density urban environment.



Address of building	MINISTERE DE LA COMMUNAUTE FLAMANDE - BATIMENT BAUDOUIN 30, avenue Albert II 1000 BRUXELLES–BELGIUM
Date of independent inspection	August 2002
Use of building	Government building
Date of construction	1989
Environment	Urban – City centre – High traffic density
Evidence of regular cleaning or maintenance	Yes, first time after 5 years service life, annually thereafter
External parts of building which were anodised	Panels – Cassettes
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	18µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 23 years, no apparent signs of corrosion and no reduction in anodic film despite high density urban environment.


L'EST REPUBLICAIN

Address of building	L'EST REPUBLICAIN 54180 HOUDEMONT (NANCY) - FRANCE
Date of independent inspection	August 2002
Use of building	Newspaper offices
Date of construction	1982
Environment	Rural zone in suburb of Nancy – proximity of a highway cross section
Evidence of regular cleaning or maintenance	None since construction
External parts of building which were anodised	Solid panels
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Bronze
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	17µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 20 years, no apparent signs of corrosion and no reduction in anodic film.

Address of building	PERNOD – RESIDENCE BERENICE 13, Boulevard Charles V 54000 NANCY-FRANCE
Date of independent inspection	August 2002
Use of building	Commercial offices
Date of construction	1981
Environment	Urban – suburb of Nancy
Evidence of regular cleaning or maintenance	None since construction
External parts of building which were anodised	Panels – Cassettes 3mx1m and 1mx1m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 21 years, no apparent signs of corrosion and no reduction in anodic film.

Address of building	EUROPEAN SYNCHROTRON RADIATION FACILITY 6, rue Jules Horowitz 38000 GRENOBLE-FRANCE
Date of independent inspection	September 2002
Use of building	Synchrotron – particles accelerator
Date of construction	1991
Environment	Centre of Grenoble valley – highly polluted area with high traffic density – close to intersection of two rivers
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Cassettes – 0.6mx2m and 0.6mx0.65m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm(EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 11 years, no apparent signs of corrosion and no reduction in anodic film despite high density, polluted environment.


MAJOWIGGINS

Address of building	CENTRE DE RECHERCHE ARJO-WIGGINS 40, rue du Grand Champ 38140 APPRIEU (RIVES) - FRANCE
Date of independent inspection	September 2002
Use of building	Research centre
Date of construction	1989
Environment	Rural – Small industrial zone–In proximity of a highway
Evidence of regular cleaning or maintenance	None for 13 years
External parts of building which were anodised	Panels – Cassettes - 1.5mx0.83m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

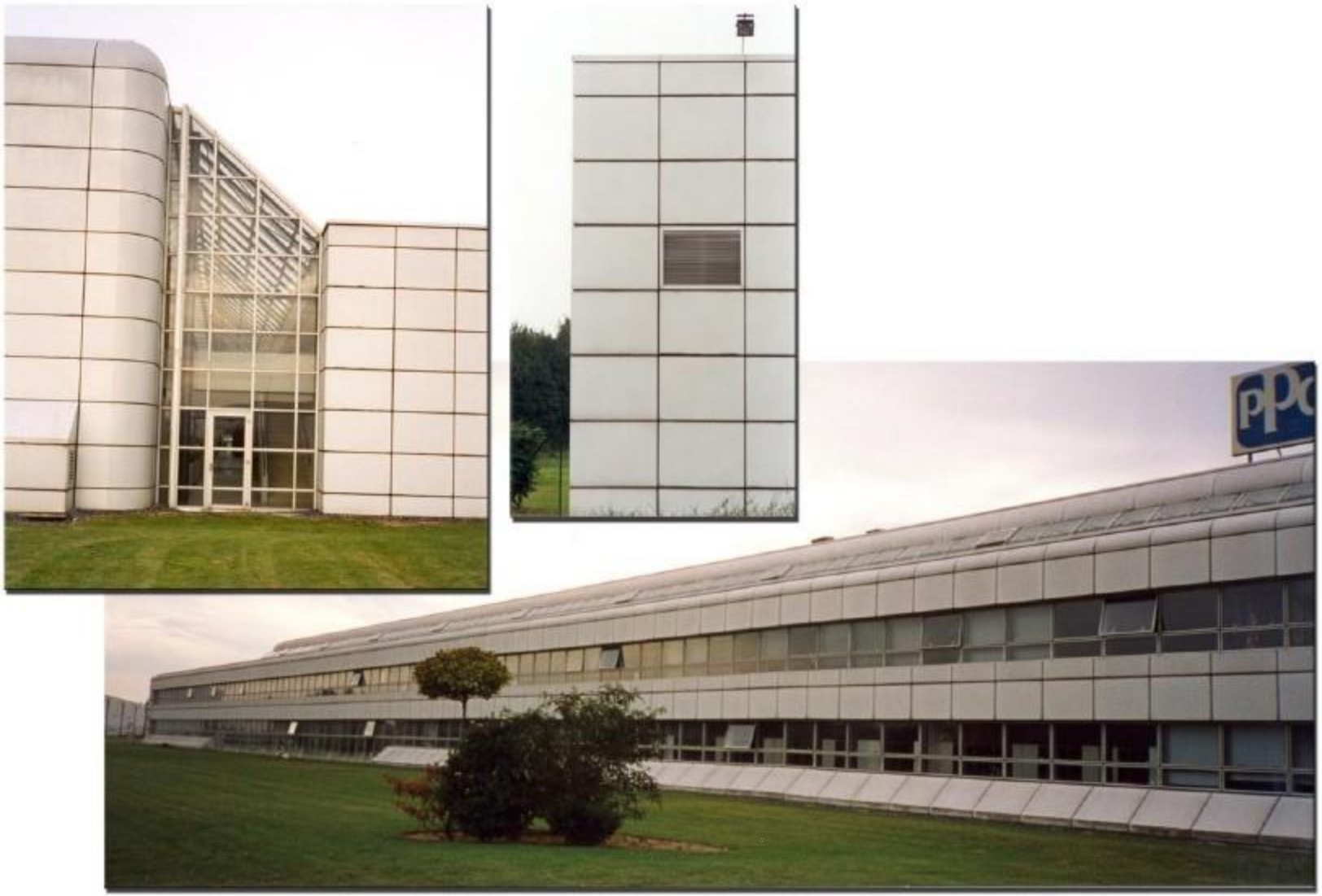
Visible signs of corrosion or surface degradation	None
Conclusion	After 13 years, no apparent signs of corrosion and no reduction In anodic film.

Address of building	COMPLEXE DE BUREAUX – LE VENDÔME 26, rue de la Closerie 93160 NOISY-LE-GRAND - FRANCE
Date of independent inspection	September 2002
Use of building	Offices
Date of construction	1988
Environment	Urban – High traffic density
Evidence of regular cleaning or maintenance	Yes, once a year
External parts of building which were anodised	Panels – Cassettes - 2mx1m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 14 years, no apparent signs of corrosion and no reduction In anodic film despite high density, polluted environment.

Address of building	CAISSE REGIONALE DE CREDIT AGRICOLE 26, rue de la Godde 45800 SAINT JEAN DE BRAYE - FRANCE
Date of independent inspection	September 2002
Use of building	Bank offices
Date of construction	1996 (revamping)
Environment	Rural environment
Evidence of regular cleaning or maintenance	Yes, every2 years
External parts of building which were anodised	Sandwich panels – 1mx1m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	Not accessible for measurement

Visible signs of corrosion or surface degradation	None
Conclusion	After 6 years, no apparent signs of corrosion and no reduction in anodic film.

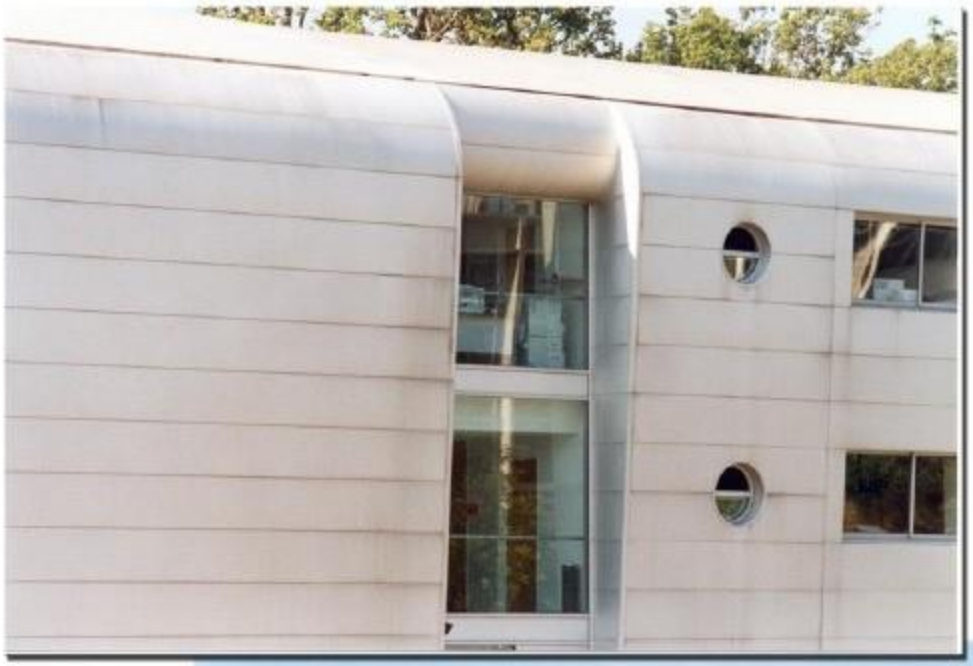


Address of building	SIEGE ADMINISTRATIF ET CENTRE DE RECHERCHE - PPG INDUSTRIES Marly 3, Z.A.E.Les Dix Muids 59583 MARLY-FRANCE
Date of independent inspection	October 2002
Use of building	Administrative offices–Research centre
Date of construction	1987
Environment	Rural – Grassland environment – Proximity of a highway
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Cassettes
Treatment	Continuous coil anodising
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)

Anodic film layer on date of independent inspection (microns)	16µm
Visible signs of corrosion or surface degradation	None
Conclusion	After 25 years, no apparent signs of corrosion and no reduction in anodic film.

Address of building	ECOLE SUPERIEURE D'APPLICATION DU GENIE - QUARTIER BERTHEZENE rue des Petites Musses 49041 ANGERS - FRANCE
Date of independent inspection	July 2003
Use of building	Military buildings
Date of construction	1989
Environment	Rural – Suburb of Angers – Close to the Maine river
Evidence of regular cleaning or maintenance	Yes
External parts of building which were anodised	Panels – Cassettes
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)

Anodic film layer on date of independent inspection (microns)	17µm
Visible signs of corrosion or surface degradation	None
Conclusion	After 14 years, no apparent signs of corrosion and no reduction in anodic film.



Address of building	CENTRE DE PHYSIQUE DES PARTICULES 163, avenue de Luminy 13288 MARSEILLE - FRANCE
Date of independent inspection	July 2003
Use of building	University – Research centre
Date of construction	1993
Environment	Marine–Suburb of Marseille
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Cassettes
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 10 years, no apparent signs of corrosion and no reduction in anodic film.

Address of building	CONSEIL ECONOMIQUE ET SOCIAL REGIONAL REGION RHONE-ALPES SITE VALD'ECULLY 4, chemin du Ruisseau 69130 ECULLY-FRANCE
Date of independent inspection	July 2003
Use of building	Regional government offices
Date of construction	2001
Environment	Urban – Suburb of Lyon – Highway cross sections–High traffic density
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Cassettes - 1.5mx0.83m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 2 years, no apparent signs of corrosion and no reduction in anodic film despite high density, polluted environment.

Address of building	CITE UNIVERSITAIRE DE LA ROBERTSAU 14, route de la Wantzenau 67085 STRASBOURG-FRANCE
Date of independent inspection	August 2003
Use of building	University lodgings
Date of construction	1998 (revamping)
Environment	Semi-rural – Suburb of Strasbourg
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Solid panels
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 15µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	16µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 5 years, no apparent signs of corrosion and no reduction in anodic film.

Address of building	PÔLE TERTIAIRE DE GALLARATE-LETORRI Via Marsala 21013 GALLARATE-ITALY
Date of independent inspection	September 2003
Use of building	Offices
Date of construction	1990
Environment	Semi-urban – 30km from Milan–Close to Malpensa Airport
Evidence of regular cleaning or maintenance	No
External parts of building which were anodised	Panels – Cassettes - 2.5mx0.8m
Treatment	Continuous coil anodised
Anodiser	Coil N.V., Belgium
Colour	Clear
Original anodic film layer on anodised parts (microns)	Class 12µm (EN12373-1)
Anodic film layer on date of independent inspection (microns)	14µm

Visible signs of corrosion or surface degradation	None
Conclusion	After 13 years, no apparent signs of corrosion and no reduction In anodic film.