

# Average Corrosion Salaries Reach New Highs in North America and Europe

KATHY RIGGS LARSEN, ASSOCIATE EDITOR

To compile information from NACE International members on their annual compensation, job duties, work experience, education level, company size, and number of years in the profession, *Materials Performance* conducted its 15th annual corrosion career survey in April 2013. The survey questionnaire was e-mailed to NACE members in the United States, Canada, and Europe (the 17 European Union countries that use the Euro as their currency—Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, The Netherlands, Portugal, Slovakia, Slovenia, and Spain). A completed survey was submitted by ~14% of members contacted in the United States, 14% in Canada, and 15% in the selected European countries. To all who shared the information that helped create this report for NACE members and others who work in corrosion control, the *MP* staff extends its appreciation and thanks.

This year's annual corrosion career survey results show a rise in average annual salaries for corrosion professionals in the United States, Canada, and European Union (EU) countries, with new highs reached for all three groups surveyed. Including salary and bonuses, the average annual U.S. compensation is \$103,148, an increase of ~4.6% over the 2012 average annual salary of \$98,384. This is the first year that the average annual salaries in the United States hit the six-figure mark. The U.S. salary increase this year is larger than last year's (~2.6%) and the highest increase reported for the United States since *MP's* corrosion career survey in 2005. The average annual Canadian taxable income this year is CAN\$108,108 (equivalent to U.S. \$104,200), a slight increase (0.69%) over last year's average annual salary of CAN\$107,364 and less than the ~2.3% increase experienced by Canadians in 2012. The average annual EU salary increased this year to €68,637 (equivalent to U.S. \$88,336), which is up by ~3.7% from last year's reported average annual salary of €66,098 and a reverse of the 1.8% salary decrease experienced in Europe from 2011 to 2012.

**TABLE 1**

**History of Average Annual Corrosion Salaries**

Year	United States (U.S.\$) <sup>(A)</sup>	Canada (CAN\$) <sup>(B)</sup>	Europe <sup>(C)</sup>
2013	\$103,148	\$108,108	€68,637
2012	\$98,384	\$107,364	€66,098
2011	\$95,802	\$104,917	€67,281
2010	\$95,036	\$103,317	N/A
2009	\$90,902	\$96,757	N/A
2008	\$88,354	\$94,357	N/A
2007	\$87,792	\$92,594	N/A
2005	\$84,421	\$76,580	N/A
2004	\$73,181	\$77,773	N/A
2003	\$74,696	\$76,245	N/A

Source: NACE International Annual Career Surveys

<sup>(A)</sup>Salary plus bonus.

<sup>(B)</sup>Taxable income in Canadian dollars.

<sup>(C)</sup>Salary plus bonus.

N/A: Information not available. Canadian salaries were added to the survey in 2002. European salaries were added in 2011.

Over the past decade, the average annual salary for corrosion professionals has increased by ~28% in the United States and ~29% in Canada. Similar data are not available for the EU average annual salary, which was added to the survey in 2011. The currency exchange rates at press time (May 28, 2013) were U.S. \$1 to CAN \$1.0375 and €0.7772. See Table 1 for a listing of average annual corrosion salaries for the past 10 years.

The 2013 survey results indicate that more corrosion professionals in North America and Europe (vs. 2012) earned above average incomes as compared to the mean annual wage of \$79,000 for architecture and engineering occupations reported for May 2012 by the U.S. Bureau of Labor and Statistics.<sup>1</sup>

About two-thirds (~67%) of U.S. respondents (a 9% increase from 2012) earned an annual salary of \$80,000 or more—with 55% (an 8% increase from 2012) earning \$90,000 or more; ~45% (an 8% increase) earning \$100,000 or more; and ~15% (a 4% increase) earning \$150,000 or more annually. More than two-thirds (~70%) of Canadian respondents also reported earning an annual salary of CAN\$80,000 or more, a 1% increase from last year; ~58% earned CAN\$90,000 or more, a 1% decrease; ~46% earned CAN\$100,000 or more per year, a 4% decrease; and ~17% earned CAN \$150,000 or more, a 3% increase. In the European survey, ~30% earned an annual salary of €80,000 or more (compared to 27% in 2012), ~21% earned €90,000 or more (compared to 19% in 2012), ~12% earned €100,000 or more (the same as in 2012), and ~2% earned €150,000 or more (the same as in 2012). Figures 1, 2, and 3 show annual compensation by salary range.

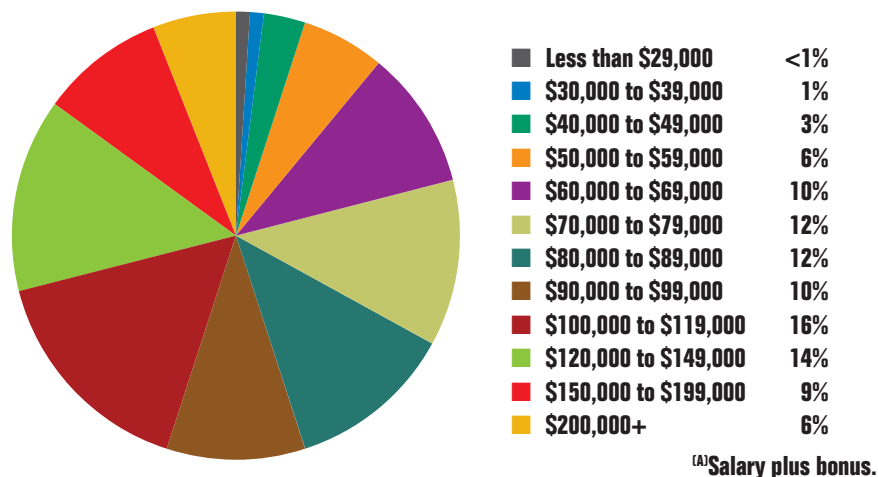
### Corrosion Professionals Are Trained and Educated

Today's corrosion control workforce in North America and Europe continues to be comprised of many individuals with corrosion-control training as well as higher education.

A significant number of survey participants have attended educational, course-based training in the past 10 years—80% in the United States, 88% in Canada, and

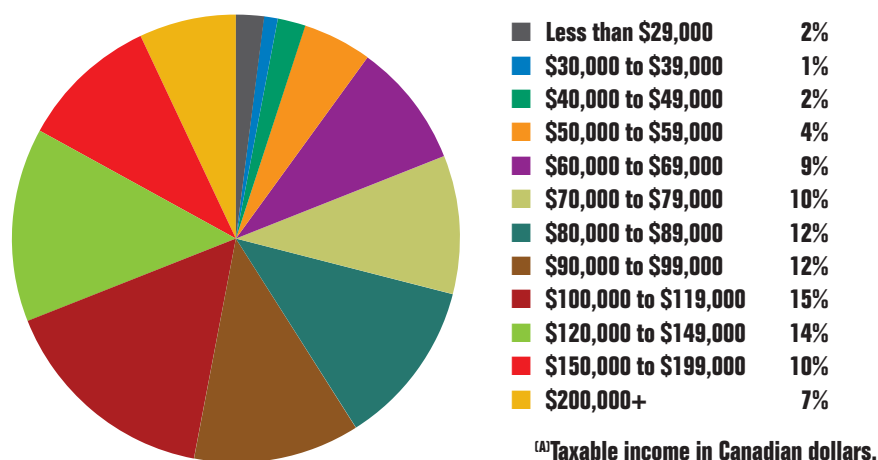
**FIGURE 1**

#### ANNUAL COMPENSATION FOR U.S. PROFESSIONALS<sup>(A)</sup>



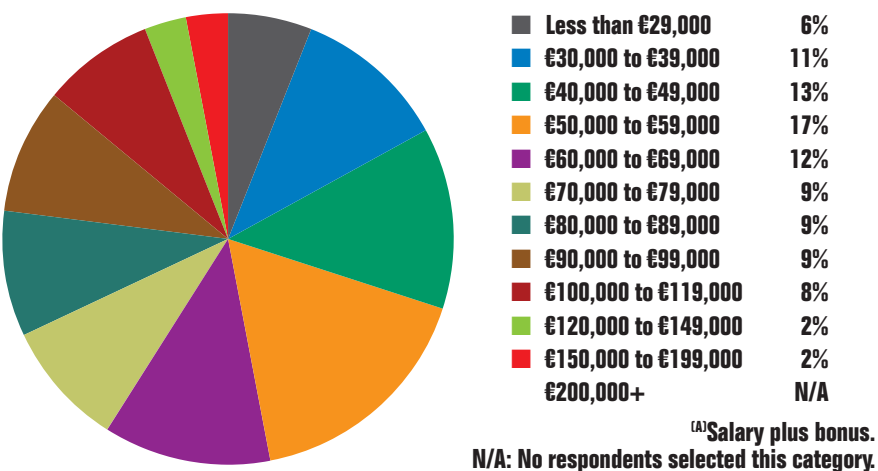
**FIGURE 2**

#### ANNUAL COMPENSATION FOR CANADIAN PROFESSIONALS<sup>(A)</sup>



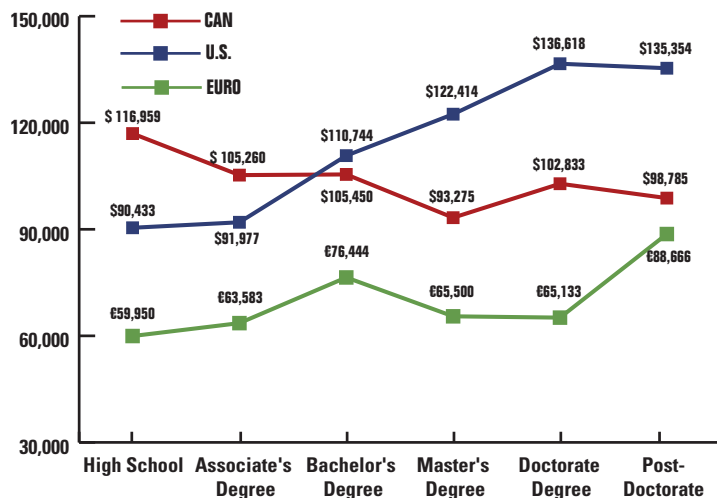
**FIGURE 3**

#### ANNUAL COMPENSATION FOR EUROPEAN PROFESSIONALS<sup>(A)</sup>



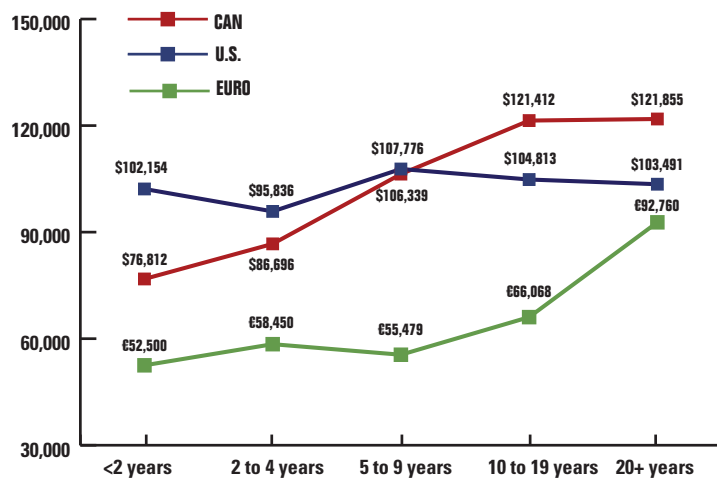
**FIGURE 4**

**AVERAGE SALARY BY HIGHEST EDUCATION LEVEL**



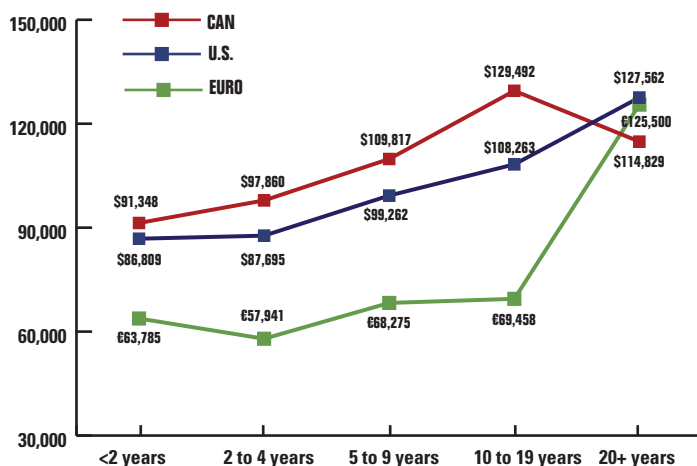
**FIGURE 5**

**AVERAGE SALARY BY YEARS OF CORROSION EXPERIENCE**



**FIGURE 6**

**AVERAGE SALARY BY YEARS OF NACE INTERNATIONAL MEMBERSHIP**



83% in Europe—and many hold at least one NACE certification: 75% in the United States, 71% in Canada, and 45% in Europe. The most-held NACE certifications in the United States are Coating Inspector

Level 1 (24% of respondents, with an average annual salary of \$95,170), followed by Cathodic Protection (CP) Tester (18%, with an average annual salary of \$85,578). In Canada, the certifications held by most

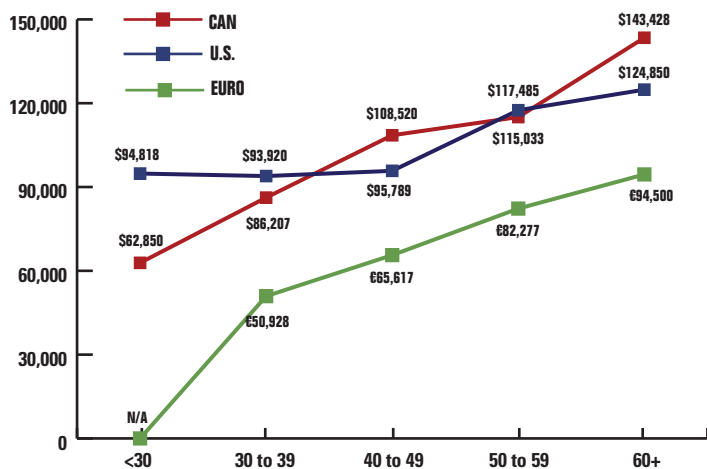
respondents are Coating Inspector Level 1 (25% of all survey participants, with an average annual salary of CAN\$109,212) and Coating Inspector Level 3 (14%, with an average annual salary of \$126,268). The top NACE certifications held in Europe are Coating Inspector Level 1 (14% with an average annual salary of €69,500) and Coating Inspector Level 3 (14% with an average annual salary of €71,166). Table 2 lists average annual salaries by NACE certification.

Additionally, about 65% of respondents in the United States, 67% in Canada, and 88% in Europe possess an associate's degree or higher—all increases over results reported in 2012. The percentages of participants holding a bachelor's degree are 33% in the United States, 30% in Canada, and 21% in Europe; the number possessing a master's degree are 10% in the United States, 7% in Canada, and 34% in Europe; and those with a doctorate degree or higher are 5% in the United States, 4% in Canada, and 25% in Europe. The survey results show that average annual incomes generally increase for U.S. respondents as their education level increases, with those at the doctorate level drawing the largest average annual salaries. For Canadian and European respondents, higher education levels do not always correlate to higher average annual salaries, as seen in Figure 4.

Those with a Professional Engineer (P.E.) license comprise 9% of U.S., 15% of Canadian, and 23% of European respondents. Other professional certifications are also held by some of the respondents—21% in the United States, 31% in Canada, and 36% in Europe. These certifications are issued by recognized authorities that include the Association pour la Certification et la Qualification en Peinture Anticorrosion (ACQPA); American Petroleum Institute (API); Association of Science and Engineering Technology Professionals of Alberta (ASET); American Society for Nondestructive Testing, Inc. (ASNT); American Welding Society (AWS); Board of International Registration for Nuclear Coating Specialists (BIRNCS); Centre Français de l'anticorrosion (CEFRACOR); Canadian

**FIGURE 7**

**AVERAGE SALARY BY HOURS WORKED PER WEEK**



N/A: No respondents selected this category.

General Standards Board (CGSB); Canadian Welding Bureau (CWB); Frosio, the Norwegian Professional Council for Education and Certification of Inspectors for Surface Treatment; Institute of Corrosion (ICORR); National Center for Construction Education and Research (NCCER); National Institute for Certification in Engineering Technologies (NICET); Ontario Association of Certified Engineering Technicians and Technologists (OACETT); Project Management Institute, Inc. (PMI); SSPC: The Society for Protective Coatings; and Society of Petroleum Engineers (SPE).

**Corrosion Control Professionals Are Experienced and Stable**

Across all surveys, respondents serving in the industry for 10 years or more outnumber those with less corrosion experience. In the U.S. survey, 63% of participants have been professionally involved in corrosion prevention and mitigation for 10 years or more (same as 2012), while 42% have worked in the industry for 20 years or more (vs. 40% in 2012). Results indicate that 20% of U.S. respondents have worked in corrosion control for four years or less (vs. 17% last year).

Canadian members who have worked in the corrosion field for 10 years or more comprise 55% of survey participants (down from 58% in 2012), with 30% reporting 20 years or more of corrosion experience (compared to 31% in 2012). The percentage of Canadian respondents joining the corrosion profession within the last four years increased to 26% this year vs. 25% last year.

In Europe, 53% of respondents have worked in corrosion control for at least 10 years (up from 49% in 2012), with 27% having 20 or more years of experience (up from 24% in 2011). The number of respondents entering the field in Europe has declined—18% report entering the corrosion field within the last four years, which is a 9% decrease over last year.

In past surveys, respondents with more years of corrosion experience earned higher average annual salaries in the United States, Canada, and Europe, with

the highest average annual salary earned by those with 20-plus years of experience in corrosion control. The same is reported this year by Canadian respondents, with average annual salaries rising as years of experience increase. The U.S. and European survey results for this year, however, don't necessarily correlate higher average annual salaries with increasing experience, although the highest European average annual salary calculated was for 20-plus years of experience. The highest average annual salary in the United States was seen for five to nine years of experience. Figure 5 shows average annual salaries by years of corrosion experience.

In the United States, average annual salaries increased as years of NACE membership increased and the highest average annual salary by membership (\$127,562) was reported for those with 20 or more years with NACE. The highest average annual salary by membership (€125,500) was also reported for European respondents with 20 or more years with NACE, although higher average annual salaries didn't always correspond with more years of membership at levels below 20-plus years. The highest average annual salary by membership for Canadians was CAN\$129,492 for those with 10 to 19 years with NACE. Figure 6 shows average annual salary by years of NACE membership.

Over the past year, the number of participants who have been a NACE member for 20 years or more has increased for all

three groups surveyed, with the number of respondents increasing from 20 to 22% in the United States, 12 to 15% in Canada, and 3 to 6% in Europe. In contrast, the number of respondents who have less than 10 years of NACE membership has decreased for all three groups: down from 57 to 56% for the United States, 65 to 61% for Canada, and 85 to 80% for Europe. The percentages of respondents joining NACE within the past two years are 19% for the United States, 29% for Canada, and 25% for Europe.

In May 2013, total NACE membership was 31,344—an ~8% increase in membership since May 2012.

In addition to continuing in the corrosion profession for many years, a number of respondents have stayed with their employers on a long-term basis. About 44% of U.S. participants have worked for their current employer for 10 or more years (vs. 42% in 2012), and 26% (vs. 24% in 2012) have been with the same employer for 20 years or more; the results are similar to last year's survey results. About 18% of U.S. respondents have been with their employer less than two years. The percentage of Canadian respondents working for the same employer for 10 or more years is 35% (vs. 37% last year), with 18% (vs. 17% in 2012) staying with the same firm for 20 or more years—also similar to results from 2012. About 21% of respondents have been with their employer less than two years. The percentage of European respondents who have worked for their



TABLE 2

## Average Salary by NACE Certification

NACE Certification	United States (U.S.\$)	Canada (CAN\$)	Europe
NACE Certified Coating Inspector Level 1	\$95,170	\$109,212	€69,500
NACE Certified Coating Inspector Level 1—Nuclear Facilities Certification Supplement (NFCS)	\$119,500	N/A	N/A
NACE Certified Coating Inspector Level 1 with NACE CIP Bridge Endorsement	\$123,388	N/A	N/A
NACE Certified Coating Inspector Level 1 with successful completion of the Marine Coating Inspection Course and NACE CIP Bridge Endorsement	N/A	N/A	N/A
NACE Certified Coating Inspector Level 1 with successful completion of the Marine Coating Inspection Course	\$117,000	\$84,500 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 2	\$99,915	\$115,184	€52,277
NACE Certified Coating Inspector Level 2—Marine Certified	\$101,000	\$84,500 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 2—NFCS	\$122,500	N/A	N/A
NACE Certified Coating Inspector Level 2 with NACE CIP Bridge Endorsement	\$134,500	N/A	N/A
NACE Certified Coating Inspector Level 2—Marine Certified with the NACE CIP Bridge Endorsement	\$94,500 <sup>(A)</sup>	N/A	N/A
NACE Certified Coating Inspector Level 2—Marine Specialty	\$167,750 <sup>(A)</sup>	\$79,500 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 3	\$105,002	\$126,268	€71,166
NACE Certified Coating Inspector Level 3 with NACE CIP Bridge Endorsement	\$116,325	\$170,000 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 3—Marine Certified	\$110,187	\$77,000 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 3—Marine Certified with the NACE CIP Bridge Endorsement	\$154,500 <sup>(A)</sup>	\$201,000 <sup>(A)</sup>	N/A
NACE Certified Coating Inspector Level 3—NFCS	\$119,111	N/A	€64,500 <sup>(A)</sup>
Chemical Treatment Specialist	\$146,100	N/A	N/A
Corrosion Specialist	\$143,388	\$152,833 <sup>(A)</sup>	€44,500 <sup>(A)</sup>
Corrosion Technician	\$90,199	\$110,279	€49,500 <sup>(A)</sup>
Corrosion Technologist	\$97,333	\$109,518	€44,500 <sup>(A)</sup>
CP Specialist	\$135,254	\$132,444	N/A
CP Technician	\$90,770	\$94,017	€92,833 <sup>(A)</sup>
CP Technician—Marine Certified	\$174,500 <sup>(A)</sup>	N/A	N/A
CP Technologist	\$102,989	\$116,736	€75,214
CP Tester	\$85,578	\$110,017	€31,750 <sup>(A)</sup>
Internal Corrosion Technologist	\$106,830	\$127,821	N/A
Internal Corrosion Specialist	\$129,346	\$64,500 <sup>(A)</sup>	N/A
Material Selection/Design Specialist	\$141,166	\$174,500 <sup>(A)</sup>	N/A
OCAT Technician	\$143,500	\$134,500 <sup>(A)</sup>	€74,500 <sup>(A)</sup>
Protective Coating Specialist	\$123,205	\$137,750 <sup>(A)</sup>	N/A
Protective Coating Technologist	\$119,045	N/A	N/A
SCAT Technician	\$103,590	\$74,500 <sup>(A)</sup>	N/A
Senior Corrosion Technologist	\$121,217	\$100,000	N/A
Senior Internal Corrosion Technologist	\$126,000	\$148,071	N/A

N/A: No respondents selected this category.

<sup>(A)</sup>Based on fewer than five responses.

current employer for 10 or more years has risen from 33% in 2012 to 43% in 2013; and the percentage of respondents serving 20-plus years with the same company increased 5% to 21% in 2013. About 14% of respondents have been with their

employer less than two years.

The results of the North American surveys indicate that the percentages of respondents who stayed with the same employer over the past decade are about the same. In the United States, 47% of

respondents (vs. 45% in 2012) report they have not changed employer during the past 10 years, with 26% of respondents (vs. 25% last year) reporting one employer change, and 12% (vs. 13%) reporting two employer changes. About 3% have changed employers five or more times over the past 10 years. While 42% (vs. 40% in 2012) of Canadian participants have not changed employers in the past 10 years, 28% report one employer change (vs. 25% last year), and 14% have changed companies twice (vs. 17% last year). About 5% have changed employers five or more times over the past 10 years. In Europe, more participants have stayed with their current employer for the past 10 years—53% compared to 42% last year. Also, fewer have changed employers once (17% vs. 29% last year) or twice (15% vs. 18% last year). Only 2% have changed employers five or more times.

Those who are self-employed make up 7% of U.S., 15% of Canadian, and 11% of European respondents, with the number of self-employed about the same as 2012 in the United States and Canada, but reduced by ~10% in Europe.

According to the survey results, the corrosion field continues to be predominantly male; however, the percentage of female respondents has increased in the European survey. Women comprise 7% of the U.S. corrosion-control workforce, 11% of the Canadian workforce, and 13% of the European workforce.

Again this year, respondents who work 60 or more hours per week are reporting higher average annual salaries (\$124,850 for U.S., CAN\$143,428 for Canadian, and €94,500 for European participants), but the percentages of respondents working those hours are small: 9% for United States and Canada, and 6% for Europe. More than half of respondents for all three surveys work a 40- to 49-hour workweek: 64% in the United States, 58% in Canada, and 56% in Europe. The percentages of those putting in 50 to 59 hours a week are 22% in the United States (a 2% increase from last year), 15% in Canada (the same), and 21% in Europe (a 6% increase).

For the most part, average annual salaries increased as the number of hours

worked per week increased for all three surveys. The average annual salary in the United States for less than 30 hours worked per week did not fit the trend, which represents ~2% of the respondents for that survey. Figure 7 shows average annual salary by hours worked per week.

### Corrosion Professionals Work in Many Industries at a Variety of Jobs

NACE members are corrosion-control professionals who are employed in many industries and perform a variety of jobs—from engineers and chemists to technicians and inspectors.

In the United States, 28% of respondents report that their company's function is related to oil and gas pipelines/storage tanks, 15% selected coatings and linings, and 13% work for a natural gas utility, which is again similar to the survey results from previous years. In Canada, the top three industries that best describe the respondents' company function are oil and gas pipelines/storage tanks (24%), coatings and linings (18%), and oil and gas extraction (15%), the same top three industries reported in the 2012 survey. Survey results for European respondents were slightly different than last year's findings, with the coatings and linings industry selected by 18% of European respondents, followed by oil and gas extraction (17%) and engineering/architectural consulting (14%).

Reported average annual salaries by company function in the United States were highest for oil and gas extraction (\$138,513), refining (\$124,484), and chemical processing (\$119,705); and lowest for academic (\$78,533) and natural gas utility (\$84,792). For Canada, the highest average annual salaries by company function were reported for construction (CAN\$137,281), water distribution and treatment (CAN\$135,250), and power plant/electric utility (CAN\$135,000). The lowest were academia (CAN\$79,333) and plastics/nonmetals (CAN\$74,500). The highest average annual salaries by company function reported for Europe are academic and chemical processing (both are €109,500), and oil and gas extraction (€85,892); with the lowest reported

**TABLE 3**

#### Average Annual Salary by Company Function

Company Function	United States (U.S.\$)	Canada (CAN\$)	Europe
Academic	\$78,533	\$79,333 <sup>(A)</sup>	€109,500 <sup>(A)</sup>
Aerospace	\$93,250	N/A	N/A
Anodic/Cathodic Protection	\$96,694	\$95,785	€44,300
Chemical Processing	\$119,705	\$119,964	€109,500 <sup>(A)</sup>
Coatings & Linings	\$98,490	\$113,537	€77,166
Construction	\$93,925	\$137,281	€69,500 <sup>(A)</sup>
Engineering/Architecture Consulting Firm	\$114,048	\$96,732	€54,041
Government	\$91,498	\$84,500 <sup>(A)</sup>	€34,500 <sup>(A)</sup>
Instrumentation	\$90,650	\$109,500 <sup>(A)</sup>	€54,500 <sup>(A)</sup>
Metals & Mining	\$108,531	\$103,916	€62,500
Natural Gas Utility	\$84,792	\$86,075	€36,000 <sup>(A)</sup>
Oil & Gas Extraction	\$138,513	\$120,413	€85,892
Oil & Gas Pipeline/Storage Tanks	\$99,043	\$118,642	€52,181
Original Equipment Manufacturer	\$110,958	\$98,666	€34,500 <sup>(A)</sup>
Plastics/Nonmetals	\$118,666	\$74,500 <sup>(A)</sup>	N/A
Power Plant/Electric Utility	\$100,490	\$135,000 <sup>(A)</sup>	€36,750 <sup>(A)</sup>
Pulp & Paper	\$98,666	\$103,333 <sup>(A)</sup>	N/A
Refining	\$124,484	\$120,545	€56,250
Research & Development	\$112,431	\$84,500	€54,500 <sup>(A)</sup>
Ships/Marine/Offshore Platforms	\$94,169	\$93,846	€51,400
Testing Services	\$94,533	\$118,150	€56,916
Transportation	\$94,780	\$125,800	€84,500 <sup>(A)</sup>
Water Distribution/Treatment	\$89,725	\$135,250 <sup>(A)</sup>	€54,500 <sup>(A)</sup>

N/A: No respondents selected this category.

<sup>(A)</sup>Based on fewer than five responses.

**TABLE 4**

#### Average Salary by Job Type

Job Function	United States (U.S.\$)	Canada (CAN\$)	Europe
Chemist	\$112,891	\$94,454	€49,500 <sup>(A)</sup>
Consultant	\$125,580	\$125,600	€55,750
Contractor	\$98,700	\$110,650	€49,400
Designer/Architect	\$97,625	\$94,500 <sup>(A)</sup>	N/A
Engineer	\$117,457	\$102,859	€68,121
Inspector/QC/QA	\$96,743	\$117,526	€69,982
Maintenance	\$80,275	\$121,055	€54,500 <sup>(A)</sup>
Management	\$120,618	\$139,605	€62,000 <sup>(A)</sup>
Professor/Teacher	\$114,346	\$174,500 <sup>(A)</sup>	€109,500 <sup>(A)</sup>
Purchasing	\$106,653	N/A	€72,833
Retired	\$81,833	\$29,000 <sup>(A)</sup>	N/A
Sales/Marketing	\$108,129	\$105,026	N/A
Student	\$34,125	\$31,750 <sup>(A)</sup>	N/A
Technician/Technologist	\$78,856	\$96,088	€45,000

N/A: No respondents selected this category.

<sup>(A)</sup>Based on fewer than five responses.

for government and original equipment manufacturer (both are €34,500). See Table 3 for average annual salaries by company function.

The types of job selected by the largest percentages of respondents in the United States are technicians/technologists (24%), engineers (21%), and quality control/qual-

ity assurance (QC/QA) inspectors (18%). These results are similar to survey findings for the past several years. The highest U.S. average annual salaries, however, are for consultants (\$125,580), management (\$120,618), engineers (\$117,457), and professors/teachers (\$114,346). The largest percentages of Canadian respondents

## 2013 Corrosion Career Survey Highlights

### AVERAGE ANNUAL SALARIES

- United States—\$103,148
- Canada—CAN\$108,108
- Europe—€68,637

### PARTICIPANTS WITH 20 YEARS OR MORE CORROSION EXPERIENCE

- United States—42%  
Average annual salary—\$103,491
- Canada—30%  
Average annual salary—CAN\$121,855
- Europe—27%  
Average annual salary—€92,760

### PARTICIPANTS WHO HAVE BEEN A NACE MEMBER FOR 20 YEARS OR MORE

- United States—22%  
Average annual salary—\$127,562
- Canada—15%  
Average annual salary—CAN\$114,829
- Europe—6%  
Average annual salary—€125,500

### PARTICIPANTS WHO JOINED NACE WITHIN THE LAST TWO YEARS

- United States—19%  
Average annual salary—\$86,809
- Canada—29%  
Average annual salary—\$91,348
- Europe—25%  
Average annual salary—€63,785

### PARTICIPANTS HOLDING AT LEAST ONE NACE CERTIFICATION

- United States—75%
- Canada—71%
- Europe—45%

### NACE CERTIFICATIONS HELD BY MOST PARTICIPANTS

#### United States:

- Coating Inspector Level 1—24%  
Average annual salary—\$95,170
- CP Tester—18%  
Average annual salary—\$85,578

#### Canada:

- Coating Inspector Level 1—25%  
Average annual salary—CAN\$109,212
- Coating Inspector Level 3—14%  
Average annual salary—CAN\$126,268

#### Europe:

- Coating Inspector Level 1—14%  
Average annual salary—€69,500
- Coating Inspector Level 3—14%  
Average annual salary—€71,166

### DOMINANT INDUSTRIES

#### United States:

- Oil and gas pipelines/storage tanks—28%  
Average annual salary—\$99,043
- Coatings and linings—15%  
Average annual salary—\$98,490
- Natural gas utility—13%  
Average annual salary—\$84,792

#### Canada:

- Oil and gas pipelines/storage tanks—24%  
Average annual salary—CAN\$118,642
- Coatings and linings—18%  
Average annual salary—CAN\$113,537
- Oil and gas extraction—15%  
Average annual salary—CAN\$120,413

#### Europe:

- Coatings and linings—18%  
Average annual salary—€77,166
- Oil and gas extraction—17%  
Average annual salary—€85,892
- Engineering/architectural consulting—14%  
Average annual salary—€54,041

**TABLE 5**

### Average Salary by Company Size

No. of Employees	United States (U.S.\$)	Canada (CAN\$)	Europe
1-5	\$112,378	\$122,426	€55,400 <sup>(A)</sup>
6-19	\$102,955	\$92,090	€74,500
20-49	\$92,433	\$105,382	€46,916
50-99	\$93,926	\$88,428	€83,666
100-499	\$97,284	\$110,590	€50,750
500+	\$106,015	\$108,709	€72,745

<sup>(A)</sup>Based on fewer than five responses.

classified their job function as technicians/technologists (27%), QC/QA inspectors (25%), and engineers (19%), which are also comparable to previous years' survey results. The highest Canadian average annual salaries are CAN\$174,500 for professors/teachers; CAN\$139,605 for management; CAN\$125,600 for consultants; and CAN\$121,055 for maintenance. The jobs held by the largest percentages of European respondents are engineers (44%) and QC/QA inspectors (35%). The highest average annual salaries in Europe are reported for professors/teachers (€109,500), purchasing (€72,833), and QC/QA inspectors (€69,982). Principal job types and corresponding average annual salaries are listed in Table 4.

More than half of survey participants work for companies with 500 or more employees—60% of U.S., 56% of Canadian, and 65% of European members—with 17% (United States), 15% (Canada), and 9% (Europe) of respondents working for companies with 100 to 499 employees; and 23% (United States), 29% (Canada), and 25% (Europe) working for companies with less than 100 employees. The highest average annual salaries by company size in North America are reported for companies with five employees or less: \$112,378 for the United States and CAN\$122,426 for Canada. In Europe, the average annual salary is highest (€83,666) for a company size of 50 to 99 employees (Table 5).

Responses were received from participants in all 50 U.S. states and Washington, DC; 10 Canadian provinces (no territories); and 13 European countries. However, the average annual salaries reported may not be typical because some of these geographic locations had few replies. Tables 6, 7, and 8 depict average salaries by state, province, and country respectively. Overall, the highest average annual salaries reported by geographic

location are \$143,315 in Alaska (United States), CAN\$133,625 in Newfoundland and Labrador (Canada), and €88,250 in France (Europe). The largest percentages of respondents in the United States are located in Texas (24%), California (7%), and Louisiana (6%), which parallels the U.S. demographic results reported in the previous four surveys. Similarly, Canada's geographic percentages mirror survey results from the last four years as well, with the largest number of participants from Alberta (53%), Ontario (14%), and British Columbia (13%). Most European respondents are located in Italy (30%), The Netherlands (20%), and France (19%).

## Corrosion Professionals Face Challenges

Survey results for the career priorities of U.S., Canadian, and European respondents are illustrated in Figure 8. In North America, many corrosion professionals report that the job aspects they would most like to change continue to be a larger budget for corrosion control and more advancement opportunities. Many European respondents also would like more advancement opportunities, but they ranked improved access to effective corrosion control technologies as important, too. For all surveys, better job security was selected by the least number of participants as something they would like to change. As one member says, "I think this is a great field for younger people to start a career in. It is only going to keep expanding, with more opportunities."

Similar to responses received from previous years' surveys on job aspects, comments from many respondents indicated they are happy with their work while others revealed a desire for better pay, larger staffs and budgets, and more manageable workloads as well as better communication between clients, coworkers, and manag-



ers. This year, respondents frequently mentioned additional corrosion-control training and education opportunities as something they would like to change in the workplace. One respondent expressed the need for “increased training and knowledge of corrosion control practices and the effects that design decisions can make on future maintenance,” and noted that designs need to effectively eliminate corrosion as a threat—something that many other participants pointed out as well. Others would like to see more time set aside for training and mentoring new employees, as indicated by a respondent who says, “They should hire more people, and do it before someone retires, to share knowledge in the field before it is too late. Be proactive!” Another remarks, “[I] would like to have some younger folks on staff to pass on my field experience and knowledge.”

Many hindrances were mentioned as survey participants shared their thoughts on the corrosion-control professional’s greatest challenge. These included keeping up with current technology and advances in the industry as well as constantly changing regulations and standards; dealing with aging infrastructure and maintaining asset integrity at an acceptable cost; convincing management of the need for adequate funds to mitigate corrosion; and balancing needs vs. budget.

Frequently, respondents observed that coworkers, customers, upper management, and others need to be educated on the importance of corrosion control. One respondent wrote that “corrosion control is not considered a high priority until a significant negative event occurs.” Another commented that the challenge is to “demonstrate the value of not having failure as a result of our activities. Success results in a ‘non-event’ situation.” Other members responded that it can be difficult to “sell” the value of preventive engineering to management and convince them of the long-term benefits of corrosion-control costs for a preventive instead of reactive approach after a failure or significant incident has occurred, and that the capital expense spent to mitigate corrosion threats during design will pay off when the as-

<b>TABLE 6</b>	
<b>Average Annual Salary by U.S. State (U.S.\$)</b>	
State	Average Salary
Alabama	\$101,322
Alaska	\$143,315
Arizona	\$87,277
Arkansas	\$85,708
California	\$114,987
Colorado	\$100,845
Connecticut	\$102,928
Delaware	\$103,785
District of Columbia	\$109,500 <sup>(A)</sup>
Florida	\$95,833
Georgia	\$105,089
Hawaii	\$84,500 <sup>(A)</sup>
Idaho	\$142,750 <sup>(A)</sup>
Illinois	\$100,295
Indiana	\$109,960
Iowa	\$79,500
Kansas	\$90,426
Kentucky	\$101,852
Louisiana	\$92,038
Maine	\$71,642
Maryland	\$100,583
Massachusetts	\$110,000
Michigan	\$86,600
Minnesota	\$89,354
Mississippi	\$91,750
Missouri	\$87,500
Montana	\$93,071
Nebraska	\$97,277
Nevada	\$93,944
New Hampshire	\$102,000 <sup>(A)</sup>
New Jersey	\$116,980
New Mexico	\$84,472
New York	\$101,375
North Carolina	\$83,980
North Dakota	\$79,500
Ohio	\$98,056
Oklahoma	\$111,438
Oregon	\$87,625
Pennsylvania	\$93,244
Rhode Island	\$102,500
South Carolina	\$101,000
South Dakota	\$71,166 <sup>(A)</sup>
Tennessee	\$110,666
Texas	\$117,900
Utah	\$88,142
Vermont	\$134,500 <sup>(A)</sup>
Virginia	\$87,513
Washington	\$105,250
West Virginia	\$100,333
Wisconsin	\$86,868
Wyoming	\$87,454
<b>U.S. Average</b>	<b>\$103,148</b>

<sup>(A)</sup>Based on fewer than five responses.

set is being operated. “In this particular industry, corrosion is to blame for many ills, but it is not something of primary

<b>TABLE 7</b>	
<b>Average Annual Salary by Canadian Province and Territory (CAN\$)</b>	
Province	Average Salary
Alberta	\$114,803
British Columbia	\$108,025
Manitoba	\$122,375 <sup>(A)</sup>
Nunavut	N/A
New Brunswick	\$119,500
Newfoundland and Labrador	\$133,625 <sup>(A)</sup>
Northwest Territories	N/A
Nova Scotia	\$86,318
Ontario	\$95,738
Prince Edward Island	N/A
Quebec	\$90,833
Saskatchewan	\$91,166
Yukon	N/A
<b>Canadian Average</b>	<b>\$108,108</b>

N/A: No respondents selected this category.

<sup>(A)</sup>Based on fewer than five responses.

<b>TABLE 8</b>	
<b>Average Annual Salary by European Country</b>	
Country	Average Salary
Austria	€74,500 <sup>(A)</sup>
Belgium	€60,500
Cyprus	N/A
Estonia	N/A
Finland	€72,833 <sup>(A)</sup>
France	€88,250
Germany	€82,833
Greece	€74,500 <sup>(A)</sup>
Ireland	N/A
Italy	€56,860
Luxembourg	N/A
Malta	€54,500 <sup>(A)</sup>
The Netherlands	€77,441
Portugal	€44,300
Slovakia	N/A
Slovenia	€31,750 <sup>(A)</sup>
Spain	€34,500 <sup>(A)</sup>
<b>European Average</b>	<b>€68,637</b>

N/A: No respondents selected this category.

<sup>(A)</sup>Based on fewer than five responses.

importance to invest in for prevention,” says one respondent.

As in past years, several survey participants commented on the need to find qualified young people that are interested in this work. “The current generation of young engineers (less than 10 years of experience) seems to be disinclined to specialize—yet all our technologies are becoming more specialized. There is a disconnect here. I worry that in 15 years or so, when the present population of



experts retires, there will be a lot of junior and intermediate people in corrosion, but fewer experts,” one member says. Another responds that the greatest challenge is “lack of a generation bridging the retiring group with the younger work force in their 30s and 40s. We are about to lose a lot of knowledge to retirement.”

Several respondents shared comments about their job satisfaction and wrote that the challenges can be satisfying as well. According to one respondent, “The job can be both frustrating and rewarding. Pride and sense of accomplishment can be achieved through troubleshooting and repairing down systems.” Another says, “I enjoy the corrosion field and love to be out in it looking for solutions and solving issues.” One member writes that “as a painter, contractor, inspector, and consultant for my entire working life, I am fulfilled in what I am doing. My participation in NACE CIP [Coating Inspector

Program] has enabled me to become the best person that I can be. This is what I love and what I will do for the rest of my life.”

### Survey Methodology

The 2013 corrosion career survey was conducted in North America and Europe using online survey software. In April 2013, approximately 12,233 members in the United States, 2,171 in Canada, and 574 in Europe received an e-mail with an invitation to participate and a link to their respective survey. At the close of the survey, 1,741 U.S. surveys were submitted, representing a 95% confidence level in the survey results, plus or minus 2% for error; 296 Canadian surveys were returned, resulting in a 95% confidence level with a margin of error of plus or minus 5%; and 84 European members responded, for a confidence level of 95% plus or minus an error margin of 10%.<sup>2</sup>

### References

- 1 U.S. Department of Labor, Bureau of Labor Statistics, “Occupational Employment Statistics, May 2012 National Occupational Employment and Wage Estimates, United States,” [http://www.bls.gov/oes/current/oes\\_nat.htm#17-0000](http://www.bls.gov/oes/current/oes_nat.htm#17-0000) (May 23, 2013).
- 2 The Survey System, <http://www.surveysystem.com/ssscal.htm> (May 23, 2013). **MP**

## NACE Corrosion Career Surveys Are Online

The most recent corrosion career surveys can be found on the NACE International Web site, [www.nace.org](http://www.nace.org), by clicking on “Publications” and then “Materials Performance.” NACE members can view surveys back to 2005 through past issues of *MP*, accessible online through the NACE Web site. For information on NACE membership, see the Web site or contact the FirstService Department at phone: +1 281-228-6223 or e-mail: [firstservice@nace.org](mailto:firstservice@nace.org).

FIGURE 8

