

Results Posted for NACE International's 2017 Annual Corrosion Career Survey

Large Gain Seen in Average Annual Salaries Reported for the United Kingdom; United States Reports Smaller Gain

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For corrosion professionals in the United States and United Kingdom, the results of this year's annual corrosion career and salary survey sponsored by *Materials Performance (MP)* magazine are very positive. The average annual U.S. salary for 2017, as determined by salaries reported by participating U.S. members of NACE International, rose again this year to reach a new high. This continues an upward trend that started in 2005. The most notable change, based on responses from NACE's U.K. members, is seen for the United Kingdom's average annual salary, which

increased more than 11% to reach its highest level since this group was added to the *MP* corrosion career survey in 2014.

The 2017 average annual salaries calculated for Canada, and European countries using the Euro, are somewhat lower than last year's. Canada's average annual salary fell to a level near the one seen in 2015 and the European average annual salary was closer to the one reported in 2014.

Including salary and bonuses, the average annual U.S. compensation is \$118,369, a 2.75% increase over the 2016 average annual salary of \$115,203. Last

year's average annual salary increase for the United States was 1.29%.

The Canadian average annual taxable income this year is CAN\$121,333, a 4.39% decrease from last year's average annual salary of CAN\$126,907. This compares to a 4.42% increase in the average annual salary experienced by Canadian respondents in 2016.

For the second year in a row, the European average annual salary figure has dropped. The 2017 average annual salary of €69,904 is a decrease of 4.24%. Last year's average annual salary of €73,000 was

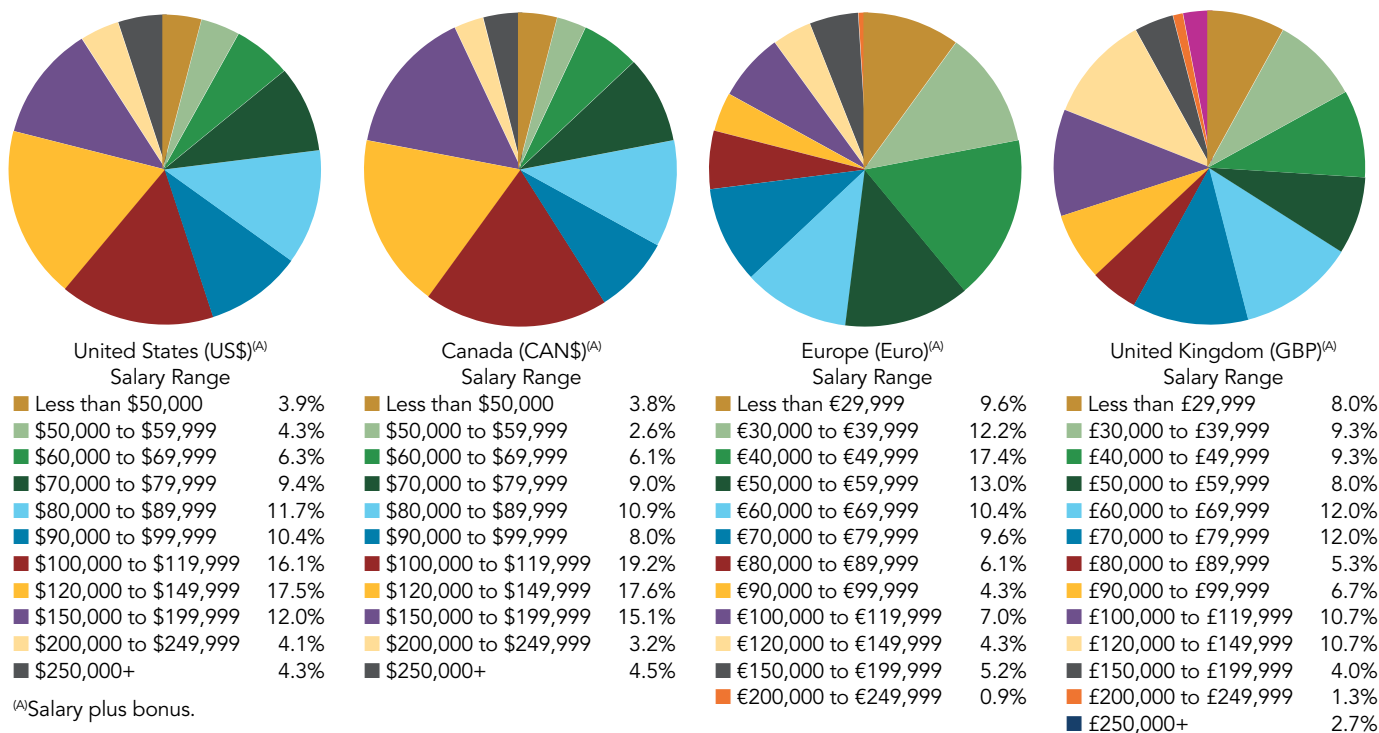


FIGURE 1 Annual compensation for corrosion professionals.

Table 1: History of Average Annual Corrosion Salaries^(A)

Year	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
2017	\$118,369	\$121,333	€69,904	£85,320
2016	\$115,203	\$126,907	€73,000	£76,738
2015	\$113,734	\$121,538	€76,147	£75,690
2014	\$108,615	\$120,480	€66,944	£78,690
2013	\$103,148	\$108,108	€68,637	N/A
2012	\$98,384	\$107,364	€66,098	N/A

Source: NACE International annual career surveys

^(A)Salary plus bonus.

N/A: Information not available.

Table 2: Average Annual Salary by Years of Corrosion Experience

Corrosion Experience	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Less than 2 Years	\$81,449	\$81,263	€48,625	N/A
2 to 4 Years	\$90,930	\$90,900	€46,091	£44,556
5 to 9 Years	\$104,243	\$114,478	€62,071	£64,286
10 to 19 Years	\$120,126	\$139,583	€74,364	£83,095
20 years or more	\$139,247	\$135,067	€84,086	£110,800

N/A: Fewer than five responders selected this category.

Table 3: Average Annual Salary by Years of NACE International Membership

NACE International Membership	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Less than 2 Years	\$96,071	\$92,583	€51,833	£62,615
2 to 4 Years	\$101,498	\$109,848	€61,600	£80,882
5 to 9 Years	\$113,048	\$121,173	€83,433	£79,130
10 to 19 Years	\$126,397	\$142,013	€85,000	£102,500
20 Years or more	\$147,749	\$133,068	€90,500	£119,375

Table 4: Average Annual Salary by Company Size

No. of Employees	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
1 to 5	\$118,586	\$138,212	€72,864	£100,667
6 to 19	\$114,988	\$108,000	€63,267	N/A
20 to 49	\$115,730	\$114,444	€53,000	N/A
50 to 99	\$100,349	\$86,429	€65,571	£46,750
100 to 499	\$114,811	\$108,047	€54,800	£79,125
500+	\$122,634	\$127,250	€75,268	£88,641

N/A: Fewer than five responders selected this category.

down from the previous year's reported average annual salary by 4.13%.

The average annual salary for survey participants in the United Kingdom is £85,320, up 11.18% from £76,738 reported in

2016, which is a significant increase over the 1.28% rise seen last year. See Table 1 for the history of average annual corrosion salaries.

When converted to U.S. dollars—US\$1 equaled CAN\$1.3512, €0.8918, and £0.7762

using currency exchange rates at press time (June 1, 2016)—the average annual salaries can be compared as follows:

- United States: \$118,369
- United Kingdom: \$109,918
- Canada: \$89,795
- Europe: \$78,391

The 2017 survey results indicate that the average annual salaries for the United States and United Kingdom are above the U.S. annual mean wage for engineers reported for May 2016 by the U.S. Bureau of Labor and Statistics,² which is \$96,440.

Earnings: 2017 vs. 2016

The percentage of U.S. respondents in all annual earnings ranges either increased or remained the same compared to last year. Survey results indicate that 76% earned \$80,000 or more (up from 74%); 64% earned \$90,000 or more (up from 62%); 54% earned \$100,000 or more (up from 52%); 20% earned \$150,000 or more (the same), and 8% earned \$200,000 or more (the same).

This year's results for Canadian participants show percentage decreases in all salary ranges when compared to 2016: 79% (down from 81%) earned CAN\$80,000 or more annually; 68% (down from 73%) earned CAN\$90,000 or more; 60% (down from 62%) earned CAN\$100,000 or more; 23% (down from 26%) earned CAN\$150,000 or more; and 8% (down from 11%) earned CAN\$200,000 or more.

Similarly, survey results for Europe also indicate percentage decreases across all salary ranges. Those who earned an annual salary of €50,000 or more per year decreased to 61% of participants (from 73%); and those who earned €60,000 or more decreased to 48% (from 54%). The percentage of those who earned €70,000 or more decreased to 37% (from 41%); the percentage of those who earned €80,000 or more decreased to 28% (from 29%); those who earned €90,000 or more declined to 22% (from 26%); and those who earned €100,000 or more declined to 17% (from 18%).

The results for U.K. respondents indicate percentage increases in all salary ranges. The number of respondents who earned £50,000 or more increased to 73% from 61% last year; those earning £60,000 or more increased to 65% (compared to 55%); respondents earning £70,000 or

more increased to 53% vs. 44%; the number of participants who earned £80,000 or more went up to 41% compared to 34%; those earning £90,000 or more went up to 36% compared to 29%; and the percentage of those who earned over £100,000 went up to 29% compared to 24%.

Average annual compensation by salary range is shown in Figure 1.

A Closer Look at the Corrosion Control Profession

Industry Experience

Again this year for all groups surveyed, respondents serving in the industry for 10 years or more continue to outnumber those with less corrosion experience: 62% in the United States, 56% in Canada, 59% in Europe, and 68% in the United Kingdom. Those reporting 20 or more years of corrosion experience are 38% in the United States, 33% in Canada, 30% in Europe, and 40% in the United Kingdom. Those respondents working in corrosion control for four years or less account for 18% in the United States, 22% in Canada, 16% in Europe, and 13% in the United Kingdom.

As their years of experience increased, participants generally earned higher average annual salaries; and those with 20 or more years of corrosion experience earned the highest average annual salaries in the United States, Europe, and the United Kingdom. Table 2 shows average annual salaries by years of corrosion experience. Likewise, the average annual salaries for respondents generally increased as years of NACE International membership increased, with the highest average annual salaries reported in the United States, Europe, and the United Kingdom for those with 20 or more years with NACE. Table 3 shows average annual salary by years of NACE membership. On May 15, 2017, the total number of NACE members worldwide was 35,795.

Tenure, Employers, and Hours on the Job

A number of respondents indicated they have stayed with their employers on a long-term basis. For the second year in a row, more reported staying with their current employer for 10 or more years. About 38% (vs. 36% in 2016) of U.S., 27% (vs. 26%) of Canadian, 45% (vs. 26%) of European, and 41% (vs. 30%) of U.K. participants have worked for their current employer for 10 or more years. Those staying with the same

Table 5: Average Annual Salary by Hours Worked Per Week

Hours Worked per Week	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Less than 30	\$95,367	\$99,938	€34,600	N/A
30 to 39 Hours	\$114,468	\$101,250	€57,438	£63,731
40 to 49 Hours	\$110,400	\$118,291	€73,925	£92,667
50 to 59 Hours	\$130,275	\$134,419	€74,250	£88,000
60 Hours or More	\$143,567	\$158,000	€72,714	£141,000

N/A: Fewer than five responders selected this category.

Table 6: Average Annual Salary by Gender

Gender	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Female	\$108,597	\$115,556	€49,143	£78,167
Male	\$119,133	\$122,087	€72,782	£85,942

Table 7: Average Annual Salary by Highest Education Level

Education	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
High School	\$105,523	\$120,630	€66,222	£87,833
Associate's Degree	\$111,337	\$125,329	€65,714	£88,333
Bachelor's Degree	\$124,209	\$122,263	€70,083	£77,040
Master's Degree	\$138,706	\$110,921	€70,822	£87,167
Doctorate Degree	\$144,175	\$114,167	€74,563	£73,636
Post-Doctorate	\$156,548	\$168,333	€65,000	£129,167

Table 8: Average Annual Salary by Most-Held NACE Certifications

NACE Certification	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
CIP Level 1	\$112,296	\$112,845	€47,111	£77,364
CIP Level 2	\$114,932	\$118,349	€59,080	£86,250
CIP Level 3—Peer Review	\$115,651	\$137,955	€93,125	£120,000
Corrosion Technician	\$101,826	\$101,538	€67,222	£42,699
Corrosion Technologist	\$114,563	\$127,500	N/A	£65,000
CP Specialist	\$144,392	\$131,667	€66,000	N/A
CP Technician	\$103,580	\$103,333	€60,000	N/A
CP Technologist	\$120,463	\$117,400	N/A	N/A
CP Tester	\$99,029	\$126,196	€41,800	N/A
Senior Corrosion Technologist	\$143,907	\$168,333	N/A	£71,727

N/A: Fewer than five responders selected this category.

Table 9: Average Annual Salary by Most-Held Job Types

Job Type	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Consultant	\$140,274	\$138,875	€99,444	£95,000
Contractor	\$123,678	\$119,286	N/A	N/A
Engineer	\$134,043	\$110,000	€74,000	£85,600
Inspector/Quality Control/ Quality Assurance	\$119,457	\$138,754	€56,536	£80,231
Maintenance	\$87,273	\$107,500	N/A	N/A
Management	\$135,228	\$137,875	€72,786	£115,500
Sales/Marketing	\$112,771	\$133,929	€95,000	N/A
Technician/Technologist	\$89,813	\$102,759	N/A	N/A

N/A: Fewer than five responders selected this category.

Table 10: Average Annual Salary by Dominant Company Functions

Company Function	United States (US\$)	Canada (CAN\$)	Europe (EURO)	United Kingdom (GBP)
Academic	\$114,516	\$109,000	€56,500	N/A
Anodic/Cathodic Protection	\$107,546	\$98,920	€56,250	£63,000
Coatings & Linings	\$113,205	\$121,923	€62,000	£83,000
Construction	\$119,230	\$112,000	€50,500	N/A
Engineering/Architecture Consulting Firm	\$128,762	\$92,333	€85,000	£109,545
Government	\$104,434	\$120,000	N/A	N/A
Oil & Gas Extraction	\$160,778	\$149,211	€85,000	£130,417
Oil & Gas Pipelines/Storage Tanks	\$123,934	\$135,738	€46,700	£75,000
Power Plant/Electric Utility	\$115,435	N/A	N/A	N/A
Refining	\$166,600	\$157,857	€82,308	N/A
Research & Development	\$129,091	\$76,000	N/A	N/A
Ships/Marine Structures/Offshore Platforms	\$96,176	N/A	€90,833	N/A
Testing Services	\$95,133	\$133,571	N/A	N/A

N/A: Fewer than five responders selected this category.

employer for 20 years or more are 18% (vs. 19%) for the United States, 12% (vs. 10%) for Canada, 21% (vs. 14%) for Europe, and 17% (vs. 14%) for the United Kingdom. About 18% of U.S., 19% of Canadian, 12% of European, and 9% of U.K. respondents have been with their employer less than two years. Survey participants who have changed jobs more than once in the past 10 years are 53% in the United States, 55% in Canada, 41% in Europe, and 44% in the United Kingdom.

Close to half of all survey participants work for companies with 500 or more employees: 55% in the United States, 46% in Canada, 49% in Europe, and 52% in the United Kingdom—with 19% (United States), 21% (Canada), 9% (Europe), and 11% (United Kingdom) of respondents working for companies with 100 to 499 employees.

Respondents employed by companies with less than 20 people are 12% in the United States, 23% in Canada, 32% in Europe, and 24% in the United Kingdom. See Table 4 for average annual salaries by company size. Those who are self-employed comprise 9% of U.S., 18% of Canadian, 26% of European, and 21% of U.K. respondents.

The majority of respondents in the United States (60%), Canada (58%), and Europe (58%) work 40 to 49 hours per week. In the United Kingdom 44% work 40 to 49 hours per week and 35% work 30 to 39 hours per week. Table 5 shows average annual salary by hours worked per week.

The corrosion field continues to be predominantly male. This year's female survey respondents accounted for 7% of the U.S. participants (vs. 8% last year), 12%

of Canadian participants (vs. 11% last year), 12% of European participants (vs. 15% last year), and 8% of the U.K. participants (vs. 10% last year). Table 6 lists average annual salaries by gender.

Education, Training, and Certification

Today's corrosion control workforce in all regions surveyed continues to be comprised of individuals with higher education as well as corrosion-control training. About 48% of respondents in the United States, 46% in Canada, 78% in Europe, and 80% in the United Kingdom possess a bachelor's degree or higher. Table 7 shows average annual salaries by education level.

The majority of survey participants report that they have attended educational, course-based training within the past 10

TABLE 11: Average Annual Salary by U.S. State (US\$)

State	Average Salary	State	Average Salary	State	Average Salary	State	Average Salary
Alabama	\$110,000	Illinois	\$122,500	Montana	\$103,333	Rhode Island	N/A
Alaska	\$147,955	Indiana	\$100,000	Nebraska	\$111,154	South Carolina	\$98,846
Arizona	\$120,000	Iowa	\$106,333	Nevada	\$106,875	South Dakota	N/A
Arkansas	\$97,714	Kansas	\$100,435	New Hampshire	\$134,286	Tennessee	\$105,278
California	\$134,797	Kentucky	\$101,333	New Jersey	\$135,333	Texas	\$135,911
Colorado	\$99,086	Louisiana	\$114,826	New Mexico	\$97,105	Utah	N/A
Connecticut	\$109,412	Maine	N/A	New York	\$116,939	Vermont	N/A
Delaware	\$98,333	Maryland	\$96,905	North Carolina	\$98,889	Virginia	\$101,027
District of Columbia	N/A	Massachusetts	\$113,261	North Dakota	\$131,478	Washington	\$113,027
Florida	\$113,179	Michigan	\$96,255	Ohio	\$119,012	West Virginia	\$99,259
Georgia	\$130,385	Minnesota	\$110,294	Oklahoma	\$125,615	Wisconsin	\$101,393
Hawaii	\$94,000	Mississippi	\$121,429	Oregon	\$99,375	Wyoming	\$105,588
Idaho	N/A	Missouri	\$127,174	Pennsylvania	\$103,161	U.S. Average	\$118,369

N/A: Fewer than five responders selected this category.

TABLE 12: Average Annual Salary by Canadian Province and Territory (CAN\$)

Province/Territory	Average Salary	Province	Average Salary
Alberta	\$132,480	Nunavut	N/A
British Columbia	\$112,258	Ontario	\$107,292
Manitoba	\$75,000	Prince Edward Island	N/A
New Brunswick	\$152,000	Quebec	\$97,053
Newfoundland and Labrador	\$124,375	Saskatchewan	\$104,833
Northwest Territories	N/A	Yukon	N/A
Nova Scotia	\$77,857	Canadian Average	\$121,333

N/A: Fewer than five responders selected this category.

TABLE 13: Average Annual Salary by European Union Country (EURO)

Country	Average Salary	Country	Average Salary
Austria	N/A	Latvia	N/A
Belgium	€72,667	Lithuania	N/A
Cyprus	N/A	Luxemburg	N/A
Estonia	N/A	Malta	N/A
Finland	€61,000	The Netherlands	€77,571
France	€76,462	Portugal	N/A
Germany	€108,182	Slovakia	N/A
Greece	N/A	Slovenia	N/A
Ireland	N/A	Spain	€51,647
Italy	€59,500	European Average	€69,904

N/A: Fewer than five responders selected this category.

TABLE 14: Average Annual Salary by U.K. Country (GBP)

Country	Average Salary	Country	Average Salary
England	£80,481	Wales	N/A
Northern Ireland	N/A	U.K. Average	£85,320
Scotland	£97,762		

N/A: Fewer than five responders selected this category.

years: 79% in the United States, 85% in Canada, 74% in Europe, and 79% in the United Kingdom. Those with a Professional Engineer (P.E.) license comprise 9% of U.S., 20% of Canadian, 30% of European, and 29% of U.K. respondents. Other professional certifications, such as those from API, ASNT, AWS, CEFACOR, CGSB, FROSIO, ICORR, NCCER, SSPC, etc., are also held by 26% of survey participants in the United States, 39% in Canada, 36% in Europe, and 65% in the United Kingdom.

More than half of all respondents in the United States, Canada, and Europe hold a NACE coating certification (52%, 50%, and 51%, respectively), with 32% of U.K. survey participants holding a NACE coating certification. A NACE cathodic protection (CP) certification is held by 44% of U.S. respondents, 41% of Canadian respondents; 17% of European respondents; and 11% of U.K. respondents. A NACE corrosion certification is held by 32% of U.S. respondents, 30% of Canadian respondents; 18% of European respondents, and 35% of U.K. respondents. Coating Inspector Program (CIP) Level 1 continues to be the most-held NACE certification by participants in all regions surveyed. CP Technician follows as the second most-held NACE certification in the United States and Canada, with Corrosion Technician tied for second in the United States; and CIP Level 2 comes up as the second most-held certification in Europe and the United Kingdom. Table 8 lists average annual salaries for the most-held NACE certifications.

Types of Jobs and Dominant Industries

In the United States, the types of job selected by the largest percentages of respondents again are similar to survey findings from the past several years. They are engineer (20%), quality control/quality assurance (QC/QA) inspector (20%), and technician/technologist (18%). The positions with the highest average annual salaries are consultant (\$140,274), management (\$135,228), and engineer (\$134,043).

The largest percentages of Canadian respondents classified their job function as engineer (24%), QC/QA inspector (19%), and technician/technologist (18%), which are comparable to survey results for the United States. The highest Canadian average annual salaries are CAN\$138,875 for consultant, CAN\$138,754 for QC/QA inspector, and CAN\$137,875 for management.

For European participants, the jobs held by the largest number of respondents are engineer (31%), QC/QA inspector (24%), and management (12%); and the highest average annual salaries are reported for consultant (€99,444), sales/marketing (€95,000), and engineer (€74,000).

The jobs held by the most U.K. respondents are engineer (33%), consultant (19%), and QC/QA inspector (17%). The highest average annual salaries are reported for management (£115,500), consultant (£95,000), and engineer (£85,600). Table 9 lists most-held job types and corresponding average annual salaries.

Oil and gas, as well as coatings and linings, continue to be among the dominant industries for corrosion professionals in all regions surveyed. Respondents selecting either oil and gas extraction or oil and gas pipelines/storage tanks as their company's primary industry include 23% in the United States (with an average annual salary of \$123,934), 21% in Canada (CAN\$109,000), and 16% in the United Kingdom (£130,417). Respondents employed in the coatings and linings industry include 20% in Europe (€62,000), 17% in the United Kingdom (£83,000), and 13% in both the United States (\$113,205) and Canada (CAN\$142,222). In Europe, 11% of respondents selected refining (€82,308) as a primary industry.

The highest average annual salaries in the United States by industry are reported for refining (\$166,600), oil and gas extraction (\$160,778), and instrumentation (\$133,333). For Canada, the highest average annual salaries by industry are reported for aerospace (CAN\$157,857), anodic/cathodic protection (CAN\$149,211), and coatings and linings (CAN\$142,222). The ships/marine structures/offshore platforms commanded the highest average annual salary by industry in Europe at €90,833, followed by engineering/architecture consulting at €85,000 and oil and gas extraction at €85,000. In the United Kingdom, the industries with the highest reported average annual salaries were oil and gas extraction (£130,417), engineering/architecture consulting (£109,545), and coatings and linings (£83,000). See Table 10 for all average annual salaries by dominant company functions.

Geographic Location

At least five responses were received from participants in 43 U.S. states; nine Canadian provinces; seven European

countries that use the Euro; and two countries in the United Kingdom. Tables 11 through 14 depict average annual salaries by U.S. state, Canadian province and territory, European country, and U.K. country, respectively.

Survey Methodology

This year marks *MP's* 19th annual corrosion career and salary survey. More than 2,200 respondents participated in the survey, which represents ~9% of the total number of NACE International members contacted (25,146). An independent survey development and management company, Newlio, conducted the survey. In April 2017, emails were delivered to approximately 19,248 NACE International members in the United States, 3,591 in Canada, 1,429 in Europe (who use the Euro as their currency), and 878 in the United Kingdom with an invitation to participate and a link to their respective online survey. At the close of the survey, 1,711 U.S. surveys were completed, representing a 95% confidence level in the survey results plus or minus 2.3% for error; 312 Canadian surveys were submitted, resulting in a 95% confidence level with a margin of error of plus or minus 5.3%; 115 European members participated, for a confidence level of 95% plus or minus an error margin of 8.8%; and 75 members from the United Kingdom completed the survey, which is a 95% confidence level of plus or minus 10.8% for a margin of error.³

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.

References

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- 3 The Survey System, <http://www.surveysystem.com/sscalc.htm> (June 12, 2017).

The Challenges Facing a Corrosion-Control Professional

When answering the question on career priorities, a high percentage of respondents from all regions surveyed report the job aspects they would most like to change continue to be more advancement opportunities and a larger budget for corrosion control. Many European respondents also selected improved access to effective corrosion control technologies as something they would most like to change. Results for this question are listed in Table 15.

This year, as in the past, participants commented they would like to have more qualified help; a better work/life balance; lighter workloads; less travel; increased understanding of corrosion programs by co-workers, customers, and upper management; and better pay.

Many participants also shared their observations about the challenges facing corrosion-control professionals. As one U.K. professional says, they are “managing corrosion in an era of tight budgets and increasing financial optimization.” Endeavoring to explain that corrosion can be mitigated and assets can be saved rather than replaced can be difficult; and participants say they find it challenging to prove to management the importance of corrosion control, coatings, corrosion inhibitors, etc. This is supported by a U.S. respondent, who says the greatest challenge is translating the corrosion and mechanical integrity language into a management language when trying to justify the costs of corrosion prevention vs. the costs of maintenance or loss related to corrosion.

Many respondents find themselves working to administer an effective corrosion control program with limited resources; that is, doing more with less. Their comments indicate that corrosion control can be a multi-tiered balancing act between the economics of corrosion control and the clients’ budget, equipment integrity needs and production needs, protective maintenance procedures and cost and time frame, and short-term investment vs. long-term returns.

Although larger budgets would enable many respondents to more effectively address corrosion issues, they comment that persuading management/asset owners to budget appropriately for corro-

Table 15: Career Priorities

Career Priorities	United States	Canada	Europe	United Kingdom
Improved access to effective corrosion control technologies	11%	7%	22%	16%
Improved relationship with upper management	12%	13%	5%	12%
Better job security	14%	16%	4%	19%
More advancement opportunities	24%	31%	36%	21%
A larger budget for corrosion control	22%	18%	19%	21%
Other	16%	15%	14%	11%

sion mitigation also can be difficult. Another U.S. participant comments that the challenge is “convincing management that money spent on corrosion prevention in the long run has the best return on investment,” while another says, “proving that an ounce of prevention is worth a pound of correction later has been a tough sale.” Many note that stakeholders need to be convinced that corrosion control is more cost-effective than repair issues down the road; however, says a Canadian participant, management sees it as a money drain, instead of looking at it as an investment. As one U.S. respondent puts it, “Investment in corrosion mitigation has high returns, but it is only realized by the companies that experienced major losses due to corrosion. It is like the challenges we face today in the U.S. in investments in health care. The healthy consider it a waste of money, and when they suffer major illness they wish they had health insurance coverage or better programs that have more comprehensive coverage.”

Persuading companies to include corrosion mitigation costs when developing budgets can be a struggle. As one respondent sums it up, “Almost always, managers would rather pay to frequently inspect and replace production equipment, pipelines, tanks, etc. than pay for corrosion-resistant designs and materials.” What is needed, adds another, is “having the money and management buy-in to do preventive maintenance like coatings under insulation, insulation and cladding repair, etc.”

“There is a need to ensure that budget holders understand the importance of

corrosion control for the long term, and don’t just deal with problems as they arise,” says one U.K. respondent. One way to do this, says another U.K. respondent, is to get involved early enough in the project to influence engineering and design practice to ensure the required through-life needs are met, and compatibility with the build process is taken into account. A U.S. respondent notes that corrosion control professionals should be “invited into the conversation proactively instead of reactively.”

As in past surveys, respondents also acknowledged the continuing loss of experienced workers and the need to transfer corrosion knowledge from the older generation to the younger generation. They see a knowledge gap between the engineers who have been around for 20-plus years and those who are just coming into the industry, and mention concerns about the lack of new corrosion professionals entering the industry. One U.S. participant laments the challenges in finding experienced personnel and believes there are not enough people in the middle to fill the industry’s needs as experienced people retire in the near future. “We are hemorrhaging experienced personnel and [there is] no coherent plan for their replacement,” says another. Still another respondent notes the need for transferring knowledge from the old guard to the next generation of engineers. “So much of what is known is not in text books and is not taught in schools,” adds another.

Adapting to industry changes/developments while managing the current

“Corrosion is just like a bill... nobody wants it, it doesn't stop, you might be able to delay the inevitable, but you still gotta deal with it. And if you forget about it for too long it will bite you...at the worst possible time.”

—U.S. Survey Respondent

workload is also mentioned as a challenge. “It's hard to get better when you're busy doing the day-to-day,” says one Canadian participant. Another remarks that each corrosion problem can be quite unique and subject to environment and process conditions. “Therefore, the greatest challenge for a corrosion professional, in my view, is to gather adequate experience in various types corrosion and damage mechanisms.”

In spite of the challenges, many respondents report that they are very happy with a corrosion-control career. “I enjoy my line of work; it's a never-ending learning process,” says one U.S. respondent. A Canadian participant says this: “I only wish I had known about oil refining and the fascinating world of corrosion when I was younger. I would've had a much longer career and, I think, much more fun!” **MP**

2017 Corrosion Career Survey Highlights

	United States (US\$)		Canada (CAN\$)		Europe (EURO)		United Kingdom (GBP)	
	%	US\$	%	CAN\$	%	EU€	%	GBP(£)
Percentage change from 2016 average annual salary:	2.75%	\$118,369	-4.39%	\$121,333	-4.24%	€69,904	11.18%	£85,320
Participants with 20 years or more corrosion experience:	38%	\$139,247	33%	\$135,067	30%	€84,086	40%	£110,800
Participants who have been a NACE member for 20 years or more:	22%	\$147,749	14%	\$133,068	9%	€90,500	11%	£119,375
Participants who joined NACE within the last two years:	16%	\$96,071	15%	\$92,583	37%	€51,833	17%	£62,615
Participants holding NACE certifications:								
Cathodic protection (CP)	44%	N/A	41%	N/A	17%	N/A	11%	N/A
Coating (CIP)	52%	N/A	50%	N/A	51%	N/A	32%	N/A
Corrosion	32%	N/A	30%	N/A	18%	N/A	35%	N/A
NACE certifications held by most participants								
CIP Level 1	28%	\$112,296	23%	\$112,845	24%	€47,111	15%	£77,364
CIP Level 2	15%	\$114,932	14%	\$118,349	22%	€59,080	11%	£86,250
CP Technician	23%	\$103,580	22%	\$103,333	5%	€60,000	1%	£29,000
CP Tester	18%	\$99,029	15%	\$126,196	4%	€41,800	1%	£65,000
Corrosion Technician	23%	\$101,826	13%	\$101,538	8%	€67,222	7%	£42,699
Senior Corrosion Technologist	6%	\$143,907	4%	\$168,333	1%	€55,000	15%	£71,727
Most-held jobs by participants								
Consultant:	7%	\$140,274	8%	\$138,875	9%	€99,444	19%	£95,000
Engineer	20%	\$134,043	24%	\$110,000	31%	€74,000	33%	£85,600
Inspector/QC/QA	20%	\$119,457	19%	\$138,754	24%	€56,536	17%	£80,231
Management	14%	\$135,228	13%	\$137,875	12%	€72,786	13%	£115,500
Technician/Technologist	18%	\$89,813	18%	\$102,759	4%	€61,000	3%	£42,000
Participants' main geographical regions:								
Texas	22%	\$135,911	—	—	—	—	—	—
California	7%	\$134,797	—	—	—	—	—	—
Alberta	—	—	57%	\$132,480	—	—	—	—
Ontario	—	—	15%	\$107,292	—	—	—	—
Italy	—	—	—	—	24%	€59,500	—	—
The Netherlands	—	—	—	—	18%	€77,571	—	—
England	—	—	—	—	—	—	72%	£80,481
Scotland	—	—	—	—	—	—	28%	£97,762
Participants' dominant industries:								
Coatings and linings:	13%	\$113,205	13%	\$121,923	20%	€62,000	17%	£83,000
Engineering/architecture firm:	9%	\$128,762	7%	\$92,333	5%	€85,000	15%	£109,545
Natural gas utility:	13%	\$102,153	6%	\$102,750	2%	€82,000	N/A	N/A
Oil and gas extraction:	5%	\$160,778	12%	\$149,211	6%	€85,000	16%	£130,417
Oil and gas pipelines/storage tanks:	23%	\$123,934	21%	\$135,738	9%	€46,700	7%	£75,000
Refining	3%	\$166,600	2%	\$157,857	11%	€82,308	1%	£175,000