

**Analysis of the questionnaire - customer satisfaction**

DAP, as accreditation body for testing laboratories, certification bodies and inspection bodies is a service provider that attaches a lot of importance to the satisfaction of its customers. Therefore, it is quite logical that DAP conducts a survey on its customers. Various criteria such as customer service effectiveness, handling of complaints and after assessment appraisals have been used as a measure of customer satisfaction. The above mentioned criteria are individual factors that are not appraised regularly but only at longer intervals, Therefore it provides too little opportunity for the clients of to forward their feedback to DAP.

A regular survey of the customers intensifies the dialogue between accreditation body and accredited laboratories, certification bodies and inspection bodies and assures a long lasting customer satisfaction. During the first DAP survey, 227 of 870 accredited bodies returned their questionnaires. The rate of return is 26 % - higher than the results of comparable surveys.

DAP would like to thank all participants in the survey for their efforts and recommendations with regard to the future activities. Conclusions made and appropriate response from DAP should encourage the other accredited bodies, which had not participated in the survey this time to do so next time.

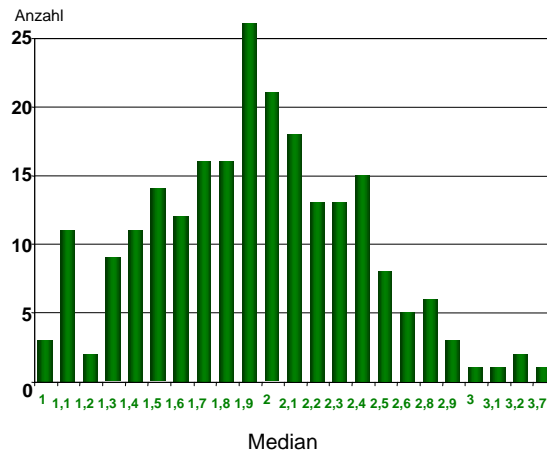
To ensure as much as possible a neutral and objective evaluation of the survey results, DAP requested the Association of Material Testing Institutions to conduct the evaluation.

**Results of the evaluation**

To verify the meaningfulness of the results, the medium of the laboratories, certification and inspection bodies was calculated. Figure 1 shows different appraisals ranking between 1 and 3.7 with a possible range between 1 (excellent) and 5 (unacceptable).

As a whole, the evaluation showed an appropriate Gaussian-distribution with 1.9 as maximum of the median. Also within a CAB, the ratings differ for the various categories. Thus one can estimate that the appraisals given represent the opinions differently of the bodies.

Fig. 1: Number of CABs with the corresponding median



The first conclusion of all appraised categories which can be made from the comparison table (see fig. 2) is that nearly all categories have been judged to be "good". As an outstanding characterization the work of the technical and lead assessors has been judged to be „good“ till „excellent“ which reflects their competence and professionalism. The response to the questions also shows that the customers consider the technical competence to be very important during assessment. The good appraisals for the assessors, which maintain the closest contact with the accredited bodies on-site, show that they have been well-trained and that their selection is in accordance with their professional qualification is well done. DAP therefore should maintain this high level.

As one can see in fig. 2, also the administrative work at the office including the management and the secretariat has been found to be "good". This appraisal applies to the accessibility, documentation management and problem-solving, too.

## TOPICS

- EVALUATION OF DAP'S CUSTOMER INTERVIEWS
- ACRYLAMIDE: DETECTION METHODS WITH RELIABLE RESULTS
- RESULTS OF INTERLABORATORY COMPARISONS
- INFORMATION ON AND STATE OF THE IMPLEMENTATION OF THE DECISIONS TAKEN BY THE CONFERENCE OF ENVIRONMENTAL MINISTERS
- DIARY

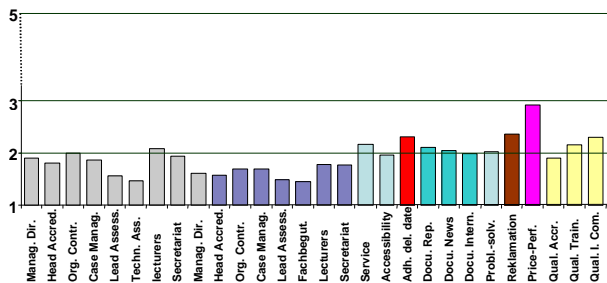


Fig. 2: Average marks of all appraised categories

An aspect most crucial is the service with respect to the fees that we charge. Also earlier surveys we did stated similar results. Comparing these results with other appraisals given for competence and quality of the accreditation which have been judged to be very positive, one can conclude that the fees charged have been found to be to high which is generally understandable. In part, the section of remarks in the questionnaire goes into details. It is stated e.g. that the pricing for many customers is not comprehensive – more explanations are therefore needed. The idea of price differentiation and not overcharging the small enterprises is heading in the direction – DAP should continue to think on that basis. Of course, one should understand that without diminishing the quality of the service, the price can only be controllable to a certain limit. One should also consider requests for less bureaucracy and more flexibility.

Another aspect criticised was the duplication of the and added costs in connection with accreditation bodies within the mandatory area. It is true that DAP cannot resolve this problem only on its own. Indeed, DAP has already signed agreements with some public authorities on the recognition of DAP assessments which can reduce the costs to justify the work. This process however has to continue and must be a permanent task to seek resolution between the mandatory and voluntary areas in the German Accreditation Council (DAR).

The handling of the accreditation process according to schedule was found to be 2.3. Some laboratories consider the time between assessment and issuing of certificates too long.

It is recommended that whenever there is a delay the parties concerned should be informed about it and about the reasons for the delay. To be fair, in some cases, the causes of delay are not from DAP but the laboratories should also play a part and should rectify their non-conformities as swiftly as possible.

Another aspect the survey was the DAP information system. There was a suggestion to install a section of FAQs. There was also an interest to be informed of decisions from and problems discussed in the sector committees.

With regard to the quality of DAP services, the accreditation department itself was given a general good average of 1.9, information meetings 2.2 and

interlaboratory comparisons received an average of 2.3.

Unfortunately, no response was received on handling of complaints, so DAP would have to ascertain the possible reasons for this.

DAP will feature the different aspects of the survey in the next issues of the DAP News and will focus on topics where suggestions were provide from the respondents of the survey questionnaire. This would also help explore improvement measures with its customers.

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### Acrylamide: detection methods with reliable results)

The risks for consumption of food contaminated with acrylamide have been subject of scientific and public discussion for almost half a year. There were findings of considerable acrylamide concentrations in baked and fried food with a high percentage of vegetable-based starch. The results of experiments on animals, which gave evidence of cancer and genetic modifications of ancestral estate, have been known for many years. As mankind is not protected against these hazards, there is an urgent and current interest of the public to have reliable analytical methods of detecting acrylamide.

Interlaboratory comparisons represent a good method to determine the quality of different test methods. The BfR Bundesinstitut für Risikobewertung (Federal Institute for Risk Assessment) Thielallee 88-92, 14195 Berlin performed an interlaboratory comparison on homogenous food samples with unknown acrylamide content. 32 laboratories participated in this test. The percentage of nearly concurrent results for the different food samples was 81 to 94 with the least reliable findings in measurements in cocoa. A detection limit of 10 - 30 µg/kg and an uncertainty of measurement of 50 µg/kg were clearly proved as a result of this interlaboratory comparison with justifiable expenses. For more information regarding the topic acrylamide, including a vast collection of documents and external links, please visit the website of the Federal Institute for Risk Assessment (A link to this information has been established in the compartment ‚Links‘ on our website).

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## Results of proficiency testing

„Tensile Test Plastics (TTP 2002)“,<sup>2</sup>  
 „Tensile Test Metallic Materials (TTM 2002) and  
 “Rockwell Hardness Test (HRC 2002)“

Proficiency testing plays a crucial role in the external quality control and assessment of competence of testing laboratories. Furthermore, proficiency testing has become more important for the accreditation of testing laboratories in connection with the mutual international recognition.

At present, there are efforts to harmonize the different approaches in the integration of proficiency testing for the accreditation worldwide. While there are areas like environmental analytics or food chemistry where there are many interlaboratory comparisons, which are partly the basis for governmental recognitions, in the area of material testing this is not so common in Germany and within Europe.

The use of interlaboratory comparisons in the context of accreditation according to DIN EN ISO/IEC 17025 is considered as a means to assure the quality of test and calibration results. Therefore, the German Accreditation System for Testing and its Sector Committee Material Testing decided to offer more possibilities for proficiency testing in the field of material testing.

In 2002, DAP under control of the Sector Committee Material Testing (SC-MT) organised the following proficiency tests:

- Tensile Test Plastics (TTP 2002),
- Tensile Test Metallic Materials (TTM 2002),
- Rockwell Hardness Test C (HRC 2002).

The IfEP Institut für Eignungsprüfung (Institute for Proficiency Testing) in Herten carried out the proficiency tests. The accredited and non-accredited laboratories from all over the world could participate in these proficiency tests.

The number of participants shows that there is a demand of qualified proficiency tests in the laboratories, figure 1. Some laboratories checked more than one set of samples having used several testing devices in one proficiency test.

Figure 1: Participants in proficiency tests

	Countries	Participants Total	Accreditation according to	
			DIN EN ISO/IEC 17025	DIN EN 45001
TTP 2002	13	50	32	11
TTM 2002	23	130	75	37
HRC 2002	14	79	42	23

In addition, the data of the proficiency tests TTP 2002 und TTM 2002 are evaluated in connection with current investigations for the determination of

uncertainty of measurement of the correspondent test methods. During the proficiency test HRC 2002, the individual uncertainty of measurement was determined for each participant according to the predefined current calculation methods on the basis of the ISO Standard.

## Tensile Test Plastics (TTP 2002)

The basis for the proficiency test TTP 2002 was the DIN EN ISO 527-1 while the organisation of the test was based on the requirements of ISO/IEC-Guide 43-1.

The participants received 10 tensile samples according to DIN EN ISO 527-2 to work on the following tasks:

- Determination of yield stress  $\sigma_Y$ ,
- Determination of elongation of yield  $\epsilon_Y$ ,
- Determination of breakage stress  $\sigma_B$ ,
- Determination of elasticity modulus  $E_t$  of the tensile test.

Table 2 shows the results of the proficiency test TTP 2002.

Table 2: Results of the proficiency test TTP 2002

	Number of participants	Sufficient results
Yield stress $\sigma_Y$	44	88,6%
Elongation of yield $\epsilon_Y$	45	73,3%
Breakage stress $\sigma_B$	46	80,4%
Elasticity modulus $E_t$	48	79,2%

## Tensile Test Metallic Materials (TTM 2002)

The basis for the proficiency test TTM 2002 was the DIN EN 10002-1:2001 while the organisation of the test was based on the requirements of ISO/IEC-Guide 43-1. The participants received 6 tensile samples according to DIN EN 10002-1:2001, annex B, sample type 2 of ferretic steel to work on the following tasks:

- Determination of technical elastic limit  $R_{p0,2}$ ,
- Determination of tensile strength  $R_m$ ,
- Determination of elongation at break A,
- Determination of elasticity modulus of the tensile test E (only for information purposes).

Table 3 shows the results of the proficiency test TTM 2002.

Table 3: Results of the proficiency test TTM 2002

	Number of participants	Sufficient results
Technical elastic limit $R_{p0,2}$	124	89,5%
Tensile strength $R_m$	126	89,7%
Elongation at break A	126	85,7%

## Rockwell Hardness Test C (HRC 2002)

The basis for the proficiency test HRC 2002 was the DIN EN 6508-1 while the organisation of the test was based on the requirements of ISO/IEC-Guide 43-1.

Each of the participants received three certified hardness comparison plates of the MPA NRW Dortmund (Materials Testing Institute of Nordrhein-Westfalen in Dortmund) with different hardness levels which should be measured.

The tables 4 and 5 show the results of the proficiency test HRC 2002.

Table 4: Results of the proficiency test HRC 2002:  
Deviation from the reference value

	Number of participants	Sufficient results
Hardness level A	79	82,3 %
Hardness level B	79	94,9 %
Hardness level C	79	93,7 %

Table 5: Results of the proficiency test HRC 2002: Repeat accuracy

	Number of participants	Sufficient results
Hardness level A	79	88,6 %
Hardness level B	79	91,1 %
Hardness level C	79	84,4 %

### Future work

Proficiency testing is an appropriate instrument to assess the competence of a testing laboratory. Proficiency tests have to be used in addition to the accreditation.

As the one-time performance of a proficiency test only is a snap-shot, it is scheduled to perform another proficiency test to be able to represent the performance of laboratories during a longer period. Therefore, a first step will be taken in June 2003 with the repeat organisation of the proficiency tests „Hardness test Vickers“ (for the first time in 1999), „Emission spectrometry“ (for the first time in 2001) and Metallography (for the first time in 2000). Information on these proficiency tests, as well as on the reports of all proficiency tests of the last years can be retrieved from: [www.eignungspruefung.de](http://www.eignungspruefung.de).

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### Information on and state of the implementation of the decisions taken by the conference of environmental ministers (UMK) regarding the accreditation and notification of measuring stations and testing laboratories in the environmental mandatory area

In November 1998, the 51<sup>st</sup> UMK in Stuttgart approved „Agreement on the proof of competence

and notification of testing laboratories in the environmental mandatory area“ compiled by the Federal/Länder Working Group and asked the Federal States to sign it. In 1999, all Federal States put this agreement in force by signature.

The testing laboratories and measurement stations have to comply with the needed material requirements according to DIN EN 45001 / DIN EN ISO/IEC 17025 and the area specific requirements laid down by the Federal States (technical guides).

Federal/Länder or Länder Working Groups worked out these technical guides.

- Waste Working Group of the Federal States on Waste (LAGA)
- Soil Federal/Länder Working Group on Soil Protection (LABO)
- Protection from Pollution Committee of German Federal States for Protection from Pollution (LAI)
- Water Working Group of the Federal States on water problems (LAWA)

In the meantime, the UMK also approved the „Agreement on the cooperation of the Federal States involved accreditation bodies in the environmental area“ also put into force by the Federal States and the accreditation bodies by signature. Both agreements will be published in the Federal Legal Gazette. Thus, all necessary conditions are given to implement the UMK decisions of 1994.

In future, only one proof of competence by the accreditation bodies or by one measuring centre appointed by a Federal State in the testing laboratories and measuring centres for tests in the environmental mandatory area will be sufficient. This proof of competence will be then the basis for the notification of the Federal States in the mentioned areas. The same also will apply, if there are applications for notification in several Federal States.

Therefore, all necessary steps are taken to ensure that the aims in the agreements with the Federal States among themselves or in the agreements between the Federal States and the involved accreditation bodies DAP, DACH and DASMIN can be put into practice in all 16 Federal States:

- The Federal States and involved accreditation bodies have common requirements for the proof of competence as condition for the notification.
- Double assessments for the proof of competence in testing laboratories and measuring stations can be avoided.
- Notifications as proof of competence for accreditations and accreditations as proof of competence for notifications of testing laboratories and measuring stations in environmental mandatory areas have to be used.
- There is a unique approach concerning different environmental areas.

A coordination committee has been appointed to help the implementation of this agreement put into practice. The committee aims at giving advice and deciding on procedural matters. In the coordination committee, there are representatives of the Working Groups of Federal States, accreditation bodies, Federation and of DAR.

## Diary

08.04.03	DAR Module E, SC-MT LGA, Nuremberg
12.05.03	Information Meeting on DIN EN ISO/IEC 17025 Germanischer Lloyd, Hamburg
13.05.03	DAR Module E, Joint Working Group Contaminated Sites DAP Office, Berlin
15.05.03	Information Meeting on DIN EN ISO/IEC 17025 Dortmund
23.05.03	DAR Module E SC Construction Engineering, Fire Protection, Acoustics and Vibrations
16. - 18.06.03	DAR Module B/C Testing Laboratories DAP Office, Berlin
10. - 12.09.03	DAR Module B/C Inspection Bodies DAP Office, Berlin
16.09.03	DAR Module E, Joint Working Group Contaminated Sites DAP Office, Berlin
06.10.03	DAR Module E, SC Air Analytics and Fibrous Particles
08.10.03	DAR Module E, SC Certification DAP Office, Berlin
13. - 15.10.03	DAR Module B/C Certification Bodies DAP Office, Berlin
16.10.03	Information Meeting and Ex- change of Experience DAP Office, Berlin
22.10.03	DAR Module E SC Non- Destructive Testing and Welding Technology DAP Office, Berlin
10.11.03	DAR Module E for all interested assessors DAP Office, Berlin
11. - 12.11.03	DAR Module E, Lead Assessors DGZfP, Berlin
14.11.03	DAR Module E SC Food Analytics DAP Office, Berlin
17. - 19.11.03	DAR Module B/C Testing Laboratories DAP Office, Berlin
27.11.03	DAR Module E SC Chemistry DAP Office, Berlin