

RecyClass

TECHNOLOGY & PRODUCT APPROVAL

QUALITY MANAGEMENT & PROCEDURES

RECYCLABILITY EVALUATION PROCEDURES

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RecyClass

DISCLAIMER

RecyClass is an initiative aiming at enhancing and evaluating the recyclability of plastic packaging through a technical perspective. The Recyclability Evaluation Protocols will promote recyclability by encouraging industry to test new plastic technologies, materials or product before market launch and giving advice and recommendations to the companies.

The Recyclability Evaluation Protocols are available for download in the PRE and RecyClass websites. Companies providing plastic packaging concepts are encouraged to use them to self-assess the impact of their solutions on recyclability and highlight potential issues. **However, compliance to a Recyclability Evaluation Protocol and Design for Recycling guidelines is not a replacement for an official assessment and may not be used as a marketing tool.**

All tests must follow the Evaluation Protocols recommended by the RecyClass Technical Committees and must be conducted by an independent laboratory approved by RecyClass which has no legal affiliation to the applicant.

More information is reported in the RecyClass Internal Procedures available in the [RecyClass website](#).

RecyClass

1. INTRODUCTION

This document lays out quality management systems and procedures to obtain a RecyClass Technology or Product Approval.

RecyClass Technology and Product Approvals offer reliable assessments of the recyclability of a plastic packaging design based on the “RecyClass Recyclability Evaluation Protocols”¹. The overall goal is to maintain the protection of packaged goods and their marketing display functions without obstructing the proper functioning of both the sorting and recycling processes.

This document provides guidance to the Applicant to ensure a perfect understanding of the requirements, duties and delivers along the Technology or Product Approval Procedure.

2. PROTOCOLS DEVELOPMENT & MAINTENANCE

RecyClass Recyclability Evaluation Protocols are owned, managed, and developed by RecyClass who ensures adequate documentation for the maintenance and improvement of the protocols.

RecyClass experts regularly review all available documentation including the protocols, laboratory report templates, and quality management systems and procedures according to recent developments in the recycling industry and the results of laboratory testing. Any changes and updates are implemented by the RecyClass Technical Committees and/or Task Forces and approved by the RecyClass Steering Board which are all composed by players representing the entire plastic value chain (raw producers, converters, brand owners, recyclers, ...) as laid out in the document “RecyClass Internal Procedures”². New updates are communicated to accredited laboratories via their main contact.

A non-exhaustive list of cases where changes to protocols documentation might be found below:

- Changes to relevant European sorting and recycling practices under the focus and scope of the protocols. Updates will need to be reflected into the laboratory documentation.
- Changes in the focus or/and scope of the RecyClass protocols by the RecyClass Steering Board.
- Repeated feedback from the laboratories following their experience during the testing and completion of the laboratory report. Frequent valuable comments will be taken into the Technical Committees and Task Forces for consideration to improve the protocols documentation.
- Stakeholders’ feedback and proposals from RecyClass members and supporters. If valuable and relevant to the protocols focus and scope, they will be submitted to the Technical Committees and Task Forces for consideration.

RecyClass considers and records all proposals to the Recyclability Evaluation Protocols and assesses their suitability within the testing scope. Suitable feedback is included in the respective documentation during the review. Reviewed documents are consulted with accredited laboratories and members to ensure the suitability and fitness of the added requirements or procedures. The RecyClass SB approves the final version of the documents for publication.

¹ *RecyClass Recyclability Evaluation Protocols*

² *RecyClass Internal Procedures – Governance & Tasks Distribution*

3. USE OF OFFICIAL DOCUMENTATION

RecyClass Recyclability Evaluation Protocols are published in English on the RecyClass website. Applicant must use the latest and official RecyClass Application Form and deliver it filled in English to RecyClass Team to start an Approval Process once read and accepted RecyClass Internal Procedures and the present Quality Management & Procedures document. Accredited laboratories must use the latest and official RecyClass document to conduct the protocols and deliver the laboratory report to the Applicant in English. The Applicant must submit the lab report delivered by an Accredited independent laboratory to the RecyClass Technical Committee to receive an endorsement. In house tests carried out by following the RecyClass Protocols, as well as tests carried out in accredited labs but not evaluated by the RecyClass Technical Committees, are not considered for approval and cannot be used to claim the technology or the product recyclability.

The laboratory report might be amended by both the Applicant and RecyClass Team in case of necessity and to bring clarity in the results. Additional tests might be added as well if required by the RecyClass Technical Committees and/or Task Forces.

Applicants who signed the Application Form prior to the publication of an updated version of the protocol may use the previous versions with which they started the evaluation process. Accredited Laboratories should offer the opportunity to continue the Recyclability evaluation process with the newest versions of the protocols.

4. ACCREDITED LABORATORIES

RecyClass Recyclability Evaluation Protocols are performed by accredited laboratories duly represented by a recognized representative who operates according to the procedures and the requirements described in both this document and in the Accredited Laboratories Procedures and Quality Management document³, as well as to the terms of the Cooperation Agreement between RecyClass and the laboratories.

The Applicant can contact one or more laboratories accredited by RecyClass for managing the testing protocol and select one to carry out the tests. However, in case the sample submitted to the test require specific competence by the lab, the RecyClass Technical Committee can address the Applicant to a specific lab.

Communication between laboratories and RecyClass must be kept at a regular basis. Laboratories must communicate to RecyClass Team any new applications for the protocols. TC representatives will guide the laboratories and the Applicants in defining the control sample and the testing conditions. Testing cannot start prior the approval of RecyClass Team.

³ *Accredited Laboratories Procedures and Quality Management*

5. DATA CONFIDENTIALITY

The entire approval process is covered by a Non-Disclosure Agreement signed between RecyClass and the Applicant to protect confidential information of innovative packaging design tested according to the Recyclability Evaluation Protocols. RecyClass Team provides the NDA template to the Applicant.

All RecyClass Technical Committees members also signed a Non-Disclosure Agreement with RecyClass to be able to participate in the meetings, access the documents and evaluate the laboratory reports. An updated list of members of the Technical Committee in charge of the evaluation is shared with the Applicant before the laboratory report submission, to allow the applicant to exclude one or more members to access the report and participate in the assessment.

In addition, a Non-Disclosure Agreement is in place between RecyClass and the accredited laboratories, as defined in the Accredited Laboratories Procedures and Quality Management document.

The Applicant can require as well to sign a Non-Disclosure Agreement with the chosen laboratory before starting the testing. This document is then at the discretion of the Applicant and the laboratory.

6. LABORATORY REPORT QUALITY CONTROL

RecyClass Team guarantees the quality and rigour of all laboratory reports via a systematic internal check procedure which ensures coherence and consistency among all issued laboratory reports. Therefore, all reports must be anticipated to RecyClass Team for revision and validation.

7. ELIGIBILITY TO APPLY FOR AN APPROVAL

Any plastic packaging containing at least one innovative feature is eligible to a technology or product approval. Innovative feature is defined as a feature not yet tested by RecyClass. Packaging fully covered by the Design for Recycling guidelines (i.e. for which RecyClass already have enough data) are considered eligible for certification and do not need to be tested via the Protocols and assessed by the TC. Product and Technology Approvals are dissociated and respectively corresponds to packaging as pledged on the market (including its final decoration) and packaging with an isolated innovation (i.e., the compatibility of the specific technology is evaluated).

The presently named “innovation” corresponds to:

- A new packaging feature (e.g., additives, adhesives, closure system, decorative technology, inks, etc.) or
- A packaging feature present with a quantity or surface above current compatibility threshold or
- A new packaging structure.

8. RECYCLABILITY EVALUATION ASSESSMENT PROCESS

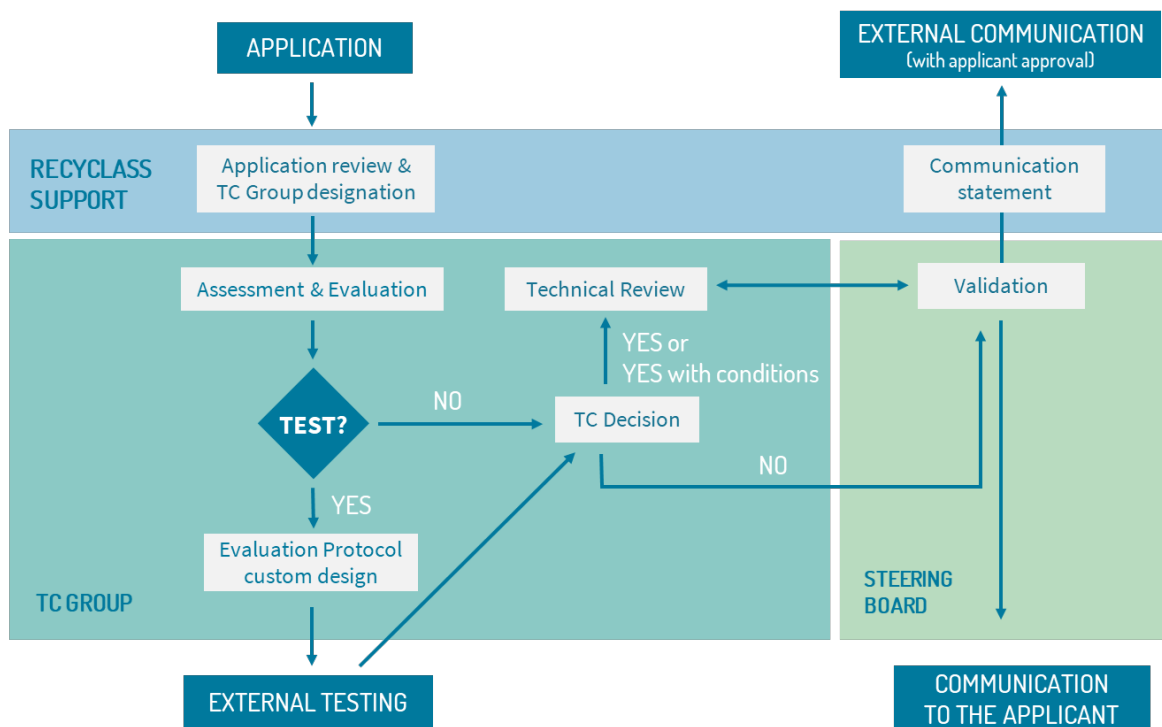
The Recyclability Evaluation Protocols aim to evaluate plastic packaging technologies or innovation materials to test and provide guidance towards its recyclability. The Protocols intend to provide clear and proven guidance on recyclability concerning plastic packaging. Additionally, the Protocols aim at facilitating the introduction of innovation or new packaging within the recycling without disrupting the current established recycling streams.

The Recyclability Evaluation Protocols will promote recyclability by encouraging industry to test innovative plastic technologies, materials or product before market launch and giving advice and recommendations to applicants.

8.1 OVERVIEW OF THE ASSESSMENT PROCESS

The decision diagram and the corresponding steps of the technology/product approval process are presented in the following figure, while a more detailed process overview is presented in section 8.2.

Figure 1: Overview of the Assessment Process Steps for Recyclability Evaluation Protocols



8.2 DETAILED PROCESS STEPS

Detailed explanation of the process steps is provided. The following section describes the materials that RecyClass offer to increase the robustness and transparency of the assessment process. A summary of the Approval process scheme is present in Annex 1.

Once got the approval, the Applicant must communicate to RecyClass Team if any changes are made to the approved technology or innovation material.

Process-step	Documents	Participants
<ul style="list-style-type: none"> • Reception of interest <p>A request is submitted by a third-party Applicant.</p> <p>RecyClass team verifies that the application falls under the scope of RecyClass and the Evaluation Protocols.</p> <p>RecyClass Team provides a NDA template to the Applicant, that can be revised internally by the Applicant. Once the terms of the agreement are defined, both parties must sign the NDA.</p> <p>RecyClass Team shares the Approval – Quality Management & Procedures document and the Application form to fill to the Applicant.</p> <p>RecyClass Team asks all available documentation, TDS, and information that can help speeding up the evaluation process (e.g., laboratory tests) to the applicant.</p>	<p>Application form</p> <p>NDA with the Applicant</p> <p>Technology/Product Approval – Quality Management & Procedures</p> <p>Additional documentations related to the innovation</p>	<p>Applicant</p> <p>RecyClass Team</p>
<ul style="list-style-type: none"> • Application Submission <p>RecyClass Team determines within which plastic stream corresponds the application and assigns a TC that will assess the application.</p> <p>RecyClass Team provides the Applicant with the updated list of TC representatives. The Applicant can have one or more representatives excluded from the discussion by written request.</p> <p>RecyClass Team circulates the necessary information provided by the Applicant on the application, except the application form, in order to report the request to the TC representatives.</p> <p>Meanwhile, RecyClass Team provides Accredited laboratories contact to the Applicant, for them to receive a quote from the labs.</p>	<p>Application form</p> <p>List of TC representatives</p> <p>Accredited laboratories contact details</p>	<p>Applicant</p> <p>RecyClass Team</p> <p>TC Representatives</p> <p>Accredited RecyClass laboratory</p>
<ul style="list-style-type: none"> • Acceptance by TC Representatives <p>The TC representatives starts a discussion on how to proceed with the assessment (conversion step, blends, control material, ...). The Chairman of the corresponding TC may facilitate the discussion by making proposals. Proposals are accepted if no answer is provided within 2 weeks from sending it. TC representatives may ask for additional information. RecyClass Team acts as focal point for communication between the Applicant and the TC.</p>		<p>Applicant</p> <p>TC Representatives</p> <p>RecyClass Team</p>
<ul style="list-style-type: none"> • Testing proceeding <p>Upon the approval of the TC representatives, the Recyclability Evaluation Protocol has to be carried out by a qualified laboratory accredited by RecyClass upon applicant's expense.</p>	<p>Recyclability Evaluation Protocol</p> <p>Laboratory Evaluation Report</p>	<p>Accredited RecyClass laboratory</p>

<p>- <i>Approval by SB</i></p> <p>The SB issues the final decision on recommendation of the TC and on the approval letter. Upon the approval, RecyClass Team announces the final decision to the Applicant.</p>	<p>Approval Letter</p>	<p>SB members RecyClass Team</p>
<p>• External communication</p> <p>External communications regroup communication of the final result either passively (e.g., adapted Guidelines for Recycling) or actively (e.g., press release). Active communication shall count with SB and the applicant approval.</p> <p>Publication of opinion statements (only positive results will be published) on RecyClass website upon Applicant’s revision and approval of the content.</p>	<p>Approval Letter Press release RecyClass Design for Recycling Guidelines</p>	<p>Applicant SB RecyClass Team</p>

8.3 AVAILABLE DOCUMENTATION FOR THE APPLICANT

8.3.1 APPLICATION FORM

The Applicant submits the completed Application Form detailing the innovation material or packaging to be approved. RecyClass Team acts as an entry point for all requests.

8.3.2 INTERNAL NON-DISCLOSURE AGREEMENT (INTERNAL NDA)

An Internal NDA is set in place between the SB, TC participants (including AB representatives) and Plastics Recyclers Europe to maintain confidentiality within RecyClass.

8.3.3 NDA WITH THE APPLICANT

Secrecy agreement to be signed by Plastics Recyclers Europe and the Applicant declaring that PRE will take all reasonable steps to maintain the confidentiality of the sensible information of the application submitted.

SB Representatives will not have access to confidential information provided to the TC in order to assess the Applicant and/or design an appropriate Recyclability Evaluation Protocol.

8.3.4 REGISTER OF SB MEMBERS

List of representatives in the SB. The list is available online at the RecyClass website. The list contains the names of the people that participate in the validation process of the Assessment Process. RecyClass Team must be informed if SB members have a conflict of interest which would de facto prevent them to respect the internal NDA.

8.3.5 LIST OF TC REPRESENTATIVES

List of representatives involved in the Assessment Process who have access to confidential information provided by the Applicant for the purpose of evaluating the impact of their technology. The Applicant has the right to ask for exclusion of one or more technical representatives from the discussion based on a justified reason. This request must

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be made in writing. The list is available online at the RecyClass website and is updated by RecyClass Team whenever changes take place. Applicants having an open application are informed of the change.

RecyClass Team must be informed if TC representatives have a conflict of interest which would de facto prevent them to respect the internal NDA.

8.4 LABORATORY TESTING

Each application is first assessed by the TC representatives to determine the necessary amount of testing needed. Recyclability Evaluation Protocols are based on the standard test procedures depending on the specific packaging design. RecyClass is aware of the high costs that may be associated with laboratory testing and will optimise the testing during the assessment in order to issue a recommendation decision to the SB.

The Recyclability Evaluation Protocols are available for download in the RecyClass website. Companies providing plastic packaging concepts are encouraged to use them to self-assess the impact of their solutions on recyclability and highlight potential issues. However, compliance to a Recyclability Evaluation Protocol is not a replacement for an official assessment and may not be used as a marketing tool.

All tests must follow the Evaluation Protocols recommended by RecyClass TC and must be conducted by an independent laboratory approved by RecyClass which has no legal affiliation to the applicant.

8.5 COSTS

RecyClass assessment process is covered under a RecyClass fee of 2.500€. However, RecyClass is not responsible for any costs related to the performance of the testing in an accredited laboratory based on the Recyclability Evaluation Protocols. Members of RecyClass benefits of a special quote by the accredited laboratories. Additionally, being a Platinum member of RecyClass offers one RecyClass fee for a Technology/Product Approval per year.

8.6 LABORATORY EVALUATION REPORT

The Applicant commits to disclose all test results with RecyClass within the Laboratory Evaluation Report that will be provided by the correspondent laboratory. The Laboratory Evaluation Report will be made available to RecyClass Team and TC who will assess the compatibility of the technology within collection and sorting schemes and determine its suitability with a determined recycling stream in Europe.

The Laboratory Evaluation Report will be shared with RecyClass under the conditions established in the NDA with the applicant.

The Laboratory Evaluation Report shall include:

- Executive Summary
- Company name & contact person
- Product name and description
- Market sector & market volume
- Test design
- Research facility & contact person
- Detailed description of input material & sample preparation
- Material & equipment used
- Process conditions
- Test results & remarks (including repeatability)
- Further comments
- Summary

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Note that the evaluation of the report is not based on an automatic scoring table assigning a score to each property or analysis depending on their results. Since an innovation can have multiple impacts on the recyclability of a material and on the evolution of its properties, it is necessary to have a general overview of the report to finally assess the recyclability, thus not permitting the use of a general formula in this assessment.

8.7 REPORT EVALUATION AND FINAL ASSESSMENT

8.7.1 TC EVALUATION

The TC reviews all Laboratory Evaluation Reports and any other relevant information provided by the Applicant. The TC provides guidance for the interpretation of the results of the performed tests. If the results are inconclusive, the TC may request to perform further testing in order to give an Approval Letter.

All documentation provided by the Applicant will be discussed between TC Representatives who have access to confidential information related to the specific application as set in the NDA signed with the Applicant.

The final assessment delivered by the TC is based on a technical evaluation of the report and the documentation provided by the Applicant. The Applicant will have the possibility to directly present the Laboratory Evaluation Report to the TC.

The TC issues an Approval Letter containing a technical review and summary of the evaluation results, conclusions, and recommendations to be submitted to the SB. In case of a positive recommendation, the Approval Letter also includes a proposal for external communication: press release and modification of the Design for Recycling Guidelines if applicable.

8.7.2 SB APPROVAL

The SB reviews the recommendations and the communication proposals of the TC and validates the Final Assessment. The SB communicates its decision to the TC.

In the event of disagreement between the SB and TC for a final recommendation, the Final Assessment will be returned to the TC including remarks from the SB. After that, the TC will meet again and may invite the Applicant and/or laboratory performing the test to participate and provide additional information regarding the packaging product or innovation material tested. The Final Assessment with clarifications is sent to SB again for validation.

RecyClass Team ensures communication of the Final Assessment to the Applicant.

8.8 APPROVAL LETTER

The Approval Letter is drafted by the TC and RecyClass Team with the SB validation. The document includes an overview of the technical review provided by the Laboratory Evaluation Report and the TC assessment and conclusions regarding the recyclability of the concept packaging or innovation material. In addition, it includes recommendations and next steps.

RecyClass provides the applicant with an Approval Letter, containing the following information:

- Disclaimer on the scope and use of the Approval Letter
- Overview of assessment process
- Impact on existing collection & sorting schemes
- Impact on the concept packaging or innovation material on recycling process
- Decision of RecyClass

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- Recommended Communication through RecyClass
- Next steps (if required)
- Class ranking (for Product approvals only)
- Annex illustrating the technology or product

The Approval Letter determines the recyclability of the tested packaging or packaging technology within which category the concept packaging or innovation material falls under according to the Design for Recycling Guidelines⁴.

- **Fully compatible** – Compatible with existing industrial recycling processes. Design solutions readily accepted by sorting centres and recyclers since the majority of the industry has the capability to identify, sort, and process a product exhibiting this feature with minimal negative effect on the operation or final product quality. Products with these features are likely to pass through the recycling process into the most appropriate material stream with the potential of producing high quality material.
- **Limited compatible** – Detrimental but still compatible with existing industrial recycling processes. Design solutions that present known technical challenges for sorting centre or recycling operations, yield or final product quality, but are reluctantly tolerated and accepted by the majority of sorting centre and recyclers.
- **Non-compatible** – Not compatible with existing industrial recycling processes. Design solutions with a significant adverse technical impact on the sorting centre or recycler's operations, yield, or final product quality. The majority of sorting centre or recyclers cannot remove these features to the degree required to generate a marketable end-product.

The Applicant may review the content of the Approval Letter before final approval by the SB. Any proposed amendments must be in line with the TC conclusions and recommendations and must be approved by the TC.

RecyClass Team sends the Approval Letter to the Applicant. RecyClass Team offers the Applicant the opportunity to discuss the report and provide suitable solutions to increase the recyclability of the innovation material or concept packaging if applicable. RecyClass has access to state-of-the-art knowledge, information, and expertise of the plastics recyclers in Europe.

RecyClass reserves the right to change the result of the Approval Letter at any time prior notification to the Applicant by using updated technology, assessments, or experience.

Note that the Approval Letter does not have an expiring date and remains valid as long as the innovation is unchanged. The Approval letter can be published or shared only entirely, and in any case all the conditions related to the approval have to be communicated. Moreover, the Approval letter can be used only to promote the technology or the product approved by RecyClass and under any circumstances to promote technologies or products not tested and positively evaluated by RecyClass.

8.9 EXTERNAL COMMUNICATION

If the Approval Letter results are positive, RecyClass publishes the Approval Letter on the RecyClass website in order to report publicly the new findings and the laboratory testing. Additional communications, such as press release, are recommended as well. Any form of communication shall be approved by the SB and the Applicant. Communications can be made available via the RecyClass website and social media accounts. Use of the positive opinion by the Applicant for marketing and communication purposes is subject to conditions and restrictions.

⁴ [RecyClass Design for Recycling Guidelines](#)

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8.9.1 APPROVAL LETTER

The Approval Letter in the case of a positive result must be published on RecyClass website. The timing should be discussed and agreed with the Applicant.

8.9.2 RECYCLASS DESIGN FOR RECYCLING GUIDELINES

RecyClass Design for Recycling Guidelines provide guidance to plastics industry players concerned with an efficient end-of-life recyclability during the first stages of product design. The Guidelines propose the most effective design solutions to facilitate a packaging recycling.

Information gathered in the Final Assessment will be used to verify or modify the information contained in the RecyClass Design for Recycling Guidelines.

8.9.3 PRESS RELEASE

RecyClass may publish a press release to communicate on positive results of the Approval Letter. The press release must be approved by the SB and the Applicant.

8.9.4 COMMUNICATION BY THE APPLICANT REFERRING TO RECYCLASS'S TEST RESULTS

The Applicant must refer accurately to all conditions and results described in the Approval Letter.

9. SUSPENSION OR WITHDRAWAL OF APPROVAL

Suspension of an Approval is a measure intended to protect the integrity of the Approvals. RecyClass may suspend an issued Approval in case of one of the following cases:

- Non-conformities found in the application form and reported in the Approval Letter
- Non-conformities found during a laboratory test procedure
- Mandatory corrective actions defined in the Approval Letter have not been adapted within the specified timeframe.
- Improper use of the approval letter (for example miscommunication to promote technologies or products not tested and successfully evaluated by RecyClass)

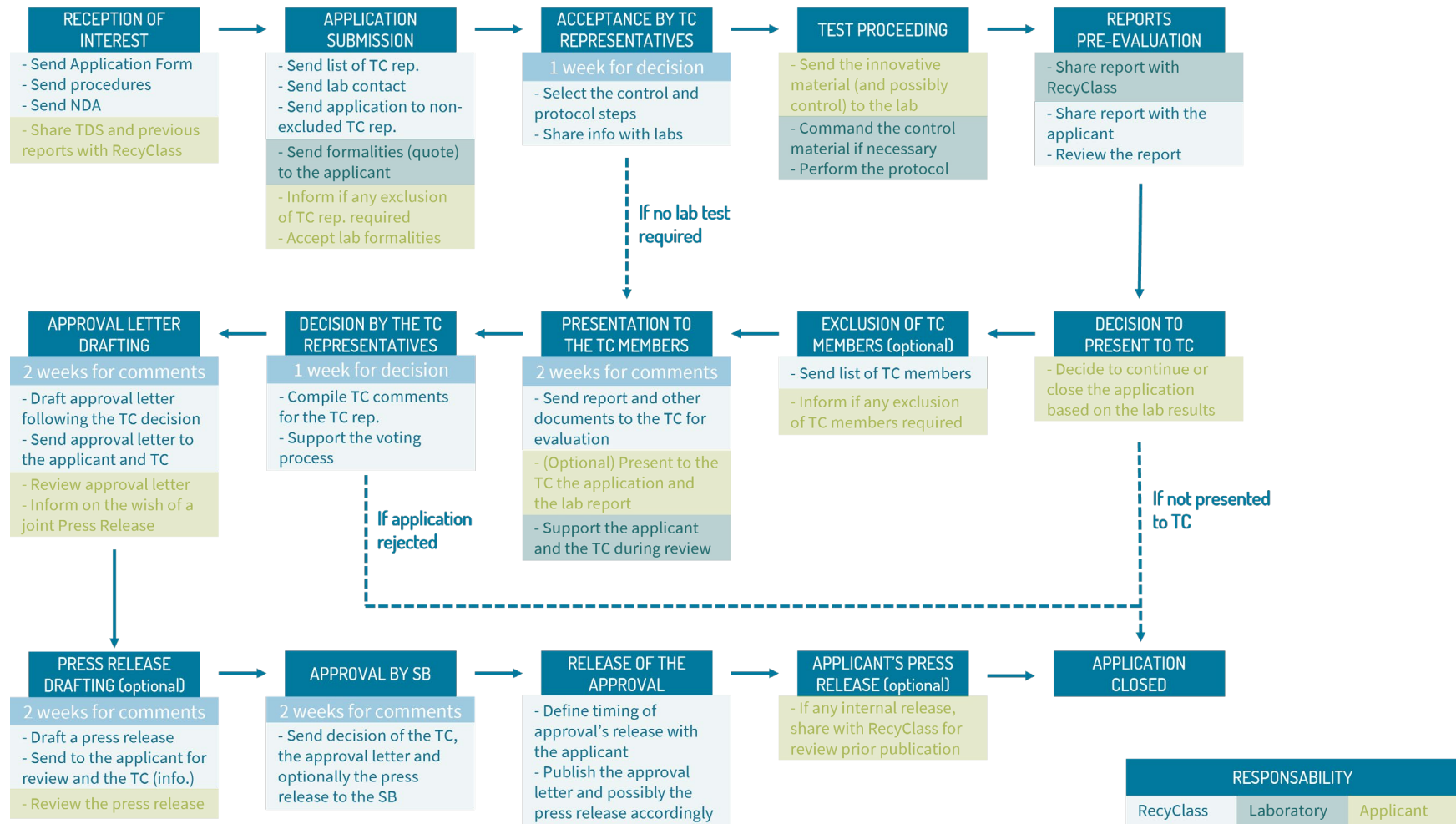
RecyClass will notify the suspension of the Approval to the Applicant. The information will include:

- Justification for the suspension
- Period of the suspension
- Practicalities of implementing the suspension – communication to costumers, stakeholders, regulations as well as handling of products with claim or logo already on the market.
- Conditions to be fulfilled by the Applicant for lifting the suspension within a 3 months time period

Approval may be revoked when mandatory corrective actions where not fulfilled within the time period, or when the suspension of an Approval had no effect. RecyClass may also revoke an Approval directly. In case of withdrawal of the Approval, RecyClass must request the Applicant to remove all corresponding communications. If considered appropriate, RecyClass may request a quality control check of the analysed innovation and blends and launch an investigation to determine if there is reason for withdrawal of the Approval.

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ANNEX 1 – Approval Procedure Scheme



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