

# General Terms and Conditions

## "vilisto.balance"

### 1. Basic provisions

- 1st1 These General Terms and Conditions "vilisto.balance" (hereinafter "**GTCs vilisto.balance**") apply to the legal relationship between us, vilisto GmbH, Schellerdamm 22-24, 21079 Hamburg, Germany, (hereinafter "**us**", "**we**", "**vilisto**") and our customers (hereinafter "**customer**") in the version valid at the time of conclusion of the contract, insofar as the customer is an entrepreneur within the meaning of section 14 of the German Civil Code (BGB), a legal entity under public law or a special fund under public law. The customer is not a consumer as defined in section 13 BGB. The contract between the customer and vilisto relates to the purchase of the adaptive hydraulic balancing function (hereinafter "**vilisto.balance**") integrated in the vilisto heating control system as an additional function.
- 1.2 Subject to a deviating individual contractual agreement between vilisto and the customer, these GTCs vilisto.balance apply exclusively to the use and activation of vilisto.balance and individual agreements made between vilisto and the customer take precedence over these GTCs vilisto.balance. For clarification: the functionality of vilisto.balance is independent of the use or availability of the vilisto Online Platform. Rather, the Online Platform provides the customer with insight into the functionality of vilisto.balance. Access to the Online Platform has been or will be provided to the customer for a limited period of time in the course of the purchase or rental of vilisto radiator thermostats and is expressly not subject to these GTCs vilisto.balance. No additional rights of use to the Online Platform shall be acquired or granted with the rental and activation of vilisto.balance. For the temporary provision of an Online Platform relating to a vilisto heating control system, the "GTCs - Maintenance of a vilisto heating control system and provision of an Online Platform" together with the appendices of vilisto (hereinafter "**GTCs Maintenance and Online Platform**") shall apply additionally and exclusively in this respect and subject to a deviating individual contractual agreement between vilisto and the customer. Deviating, conflicting or supplementary general terms and conditions of the customer shall not apply unless vilisto expressly agrees to their validity. These GTCs vilisto.balance and the GTCs Maintenance and Online Platform shall also serve as a framework agreement for future similar contracts between vilisto and the same customer, without vilisto having to refer to the validity of these GTCs vilisto.balance again in each individual case.
- 1.3 vilisto shall be entitled to have services and activities performed for the customer by third parties.
- 1.4 The customer must submit legally relevant declarations and notifications relating to the contract (e.g. setting a deadline, notification of defects, cancellation or reduction) in writing, i.e. in written or text form (e.g. letter, email, fax). Statutory formal requirements and further evidence, in particular in case of doubt as to the legitimacy of the declaring party, shall remain unaffected.
- 1.5 In the event of a change of ownership of the customer's location, specified in the order form agreed between vilisto and the customer and at which the radiator thermostats and gateways of a vilisto heating control system are installed, the customer shall remain the contractual partner, unless the purchaser or legal successor assumes the rights and obligations of the contract between vilisto and the customer or concludes a replacement contract with vilisto for the same subject matter of the contract. The same shall apply if the customer ceases to use the premises specified in the order form agreed between vilisto and the customer and at which the radiator thermostats and gateways of a vilisto heating control system are installed during the term of the contract.
- 1.6 If the customer plans to relocate the location specified in the order form agreed between vilisto and the customer, at which the radiator thermostats and gateways of a vilisto heating control system are installed, during the term of the contract, the products and services specified in the order form may only be provided at the customer's new location after prior inspection and written consent by vilisto. The customer and vilisto shall also reach a separate agreement on any additional costs of such relocation. vilisto may only refuse written consent within the meaning of section 1.6 sentence 1 of these GTCs vilisto.balance (i) if the examination shows that the relocation is unreasonable for vilisto on technical grounds, (ii) or if the customer does not enter into a separate agreement with vilisto on the additional costs associated with the relocation.

- 1.7 The customer may only assign claims against vilisto with the prior written consent of vilisto.
- 1.8 References to the applicability of statutory provisions shall be for clarification purposes only. Even without such clarification, the statutory provisions shall therefore apply unless they are directly amended or expressly excluded in these GTCs vilisto.balance.
- 1.9 These GTCs vilisto.balance do not govern the sale or rental and installation of devices for vilisto heating control systems (thermostats, gateways) or the provision of the vilisto Online Platform. Data transmission services (telecommunication services) are also not part of the service or contract.

## **2. Object of the rental agreement**

- 2.1 vilisto shall provide the customer with vilisto.balance for use during the term of the contract in return for payment.
- 2.2 vilisto shall provide the customer with vilisto.balance in the form of adaptive hydronic balancing and not in the form of static hydronic balancing. The functions of adaptive hydronic balancing and static hydronic balancing are described in the appendix "vilisto.balance service description".
- 2.3 For the use and activation of vilisto.balance, it is necessary that radiator thermostats and gateways of a vilisto heating control system are installed at the customer's location specified in the order form agreed between vilisto and the customer and that these vilisto radiator thermostats and gateways are connected to the vilisto Online Platform regarding a vilisto heating control system. The scope of vilisto.balance ordered by the customer depends on the number of radiator thermostats installed at the location specified in sentence 1 and shall be agreed by vilisto and the customer in the order form with reference to vilisto's offer.
- 2.4 vilisto shall not be obliged to check the conditions at the customer's location on site before submitting an offer and/or concluding a contract, unless expressly agreed otherwise.
- 2.5 vilisto reserves the right to technical changes, changes to the design of vilisto.balance and other changes in connection with vilisto.balance which may become necessary due to further developments and/or adaptations to legal requirements, provided that these do not impair the purpose of the contract and the change is reasonable for the customer.

## **3. Activation, provision, activation period, delay and transfer of risk**

- 3.1 vilisto.balance requires activation by vilisto. vilisto carries out the activation remotely via vilisto software, so that neither an inspection of the building(s) at the customer's location specified in the order form agreed between vilisto and the customer nor manual settings on the valves or on the radiator thermostats of a vilisto heating control system or the radiators are required (hereinafter "**activation**")
- 3.2 Subject to sections 2.3 and 5.1 of these GTCs vilisto.balance, activation shall take place within approximately fourteen (14) working days from the mutual signing of the order or from the installation of the first vilisto radiator thermostats at the customer's location specified in the order form agreed between vilisto and the customer, whichever occurs later.
- 3.3 The time of provision of vilisto.balance shall be agreed individually in the order form with reference to vilisto's offer. If vilisto and the customer have not reached an agreement on this, vilisto.balance shall be deemed to have been provided as soon as activation has been completed.
- 3.4 vilisto shall inform the customer without undue delay of a new, expected activation and/or provision date if vilisto is unable to meet an agreed activation and/or provision date or the basic activation period of approximately fourteen (14) working days in accordance with section 3.2 of these GTCs vilisto.balance. Should vilisto.balance remain unable to be activated and/or provided within this new period, vilisto shall inform the customer again immediately and vilisto shall then (at its sole discretion) be entitled to withdraw from the contract in whole or in part. In this case, any consideration paid by the customer shall be refunded immediately.
- 3.5 The occurrence of default by vilisto with regard to the provision of vilisto.balance shall be determined in accordance with the statutory provisions. In any case, a reminder by the customer shall be required for default to occur.

- 3.6 The rights of the customer pursuant to section 6 of these GTCs vilisto.balance and the statutory rights of vilisto, in particular in the event of an exclusion of the obligation to perform (e.g. due to impossibility or unreasonableness of performance), shall remain unaffected.
- 3.7 Subject to sections 3.1 and 3.2 of these GTCs vilisto.balance, the risk of accidental loss and accidental deterioration of vilisto.balance shall pass to the customer at the latest upon provision of vilisto.balance. vilisto's warranty for defects and liability pursuant to section 6 of these GTCs vilisto.balance shall remain unaffected.
- 3.8 vilisto shall not be liable for damage caused by proper activation.

#### **4. Rent, terms of payment, default of payment**

- 4.1 The rent agreed in the order form with reference to vilisto's offer (the rent) shall apply.
- 4.2 The rent shall be due in advance directly at the beginning of the basic term or an extension term for the entire basic or extension term.
- 4.3 The rent shall be due within fourteen (14) days of receipt of the invoice by the customer. Invoices may be issued in the form of a downloadable and printable PDF file sent by e-mail. There shall be no right to a digitally signed invoice or paper invoice.
- 4.4 If vilisto.balance cannot be fully activated to the extent specified in the order form agreed between vilisto and the customer because the previously required installation of the vilisto radiator thermostats cannot be completed for reasons attributable to the customer, the customer shall nevertheless be obliged to pay the rent in full. In this case, the term of the contract shall start in accordance with section 5.1 sentences 3 and 4 of these GTCs vilisto.balance. Invoicing of vilisto.balance shall then be based on the date of activation of the vilisto radiator thermostats already installed within the meaning of sentence 1.
- 4.5 For payments to be considered timely within the meaning of sections 4.2 to 4.4 of these GTCs vilisto.balance, not the dispatch but the crediting of the payments shall be relevant.
- 4.6 After expiry of the aforementioned payment periods, the customer shall be in default without vilisto being required to issue a reminder. If the customer is in default, they shall owe vilisto default interest at the applicable statutory default interest rate from that point in time. vilisto shall be entitled to claim higher damages for default. The customer shall be entitled to prove that vilisto has not incurred any or only minor damages due to the default.
- 4.7 Whether and to what extent the rent is apportionable by the customer shall be determined by the customer. The customer must observe the relevant laws and regulations in this regard. vilisto shall not be obliged to assess any apportionability.
- 4.8 If, during the term of the contract as defined in section 5 of these GTCs, the customer orders additional radiator thermostats for a vilisto heating control system from vilisto in accordance with the relevant agreement, these shall extend the existing contract. In this case, subject to any future agreement to the contrary between the parties, the rent shall increase in accordance with the prices stated in the vilisto order form for each additional radiator thermostat ordered and activated for vilisto.balance.
- 4.9 If the customer defaults on payment of the rent, the following shall apply:
- a) Blocking. vilisto reserves the right to deactivate vilisto.balance after fourteen (14) days following a corresponding warning (e.g. by e-mail) until full payment has been made. During a blockage, the customer shall have no access to vilisto.balance-specific data stored in the vilisto Online Platform and shall not be able to use its functions; the obligation to pay the rent shall remain unaffected during the blockage. This shall not extend the term of the contract.
  - b) Termination. If the customer is in arrears with the payment of the rent or a not insignificant part of the rent for two (2) calendar months; or in a period extending over more than two (2) months with the payment of rent in an amount reaching twice the monthly rent, vilisto shall be entitled to terminate the contract for the provision of vilisto.balance extraordinarily after giving appropriate warning (e.g. by e-mail).

## **5. Contract term, cancellation, withdrawal**

- 5.1 The term of the contract shall commence in accordance with the individual contractual agreement between vilisto and the customer as set out in the order form including the offer. If vilisto and the customer do not agree on the commencement of the term of the contract in the order form, the term shall commence on the day of provision of vilisto.balance for the vilisto radiator thermostats installed at the customer's location specified in the order form. If provision is delayed due to the fact that vilisto radiator thermostats still need to be installed at the customer's location but installation cannot be completed for reasons for which the customer is responsible, vilisto.balance shall be activated for those vilisto radiator thermostats that have already been installed. In this case, the term of the contract shall commence upon activation of the first installed radiator thermostats.
- 5.2 The duration of the term of the contract shall be agreed between vilisto and the customer in the order form, with the regular basic term of the contract being sixty (60) months.
- 5.3 The contract shall automatically be extended for a further twelve (12) months in each case unless terminated by either party with a notice period of three (3) months to the end of the term of the contract. Compliance with the notice period shall be determined by the date on which the notice of termination is received by the recipient. The right to extraordinary termination for good cause and thus also in accordance with section 4.9. letter b) of these GTCs vilisto.balance shall remain unaffected. The customer shall not be entitled to terminate the contract for good cause in the cases specified in section 1.5 of these GTCs vilisto.balance. Notice of termination must be given in writing, i.e. in written or text form (e.g. letter, email, fax) to the contact details stated in the contract or offer.
- 5.4 If the customer is responsible for the extraordinary termination by vilisto, they shall be obliged to pay compensatory damages. As compensatory damages, the rent that would have been due until the ordinary end of the contract without termination may be declared immediately due. The customer shall be entitled to prove that vilisto has incurred no or less damage. vilisto may also claim higher damages if proof is provided.
- 5.5 The purchase and installation of vilisto radiator thermostats and gateways of a vilisto heating control system shall neither be the subject of this contract nor be governed by these GTCs vilisto.balance. However, due to the close link between the vilisto radiator thermostats including gateways and the provision of a vilisto Online Platform and vilisto.balance, vilisto reserves the right to dissolve the contract relating to vilisto.balance if vilisto dissolves or terminates the contract relating to the vilisto radiator thermostats and gateways and/or from the contract relating to the provision of a vilisto Online Platform and/or if the customer terminates these contracts with the exception of the contract relating to vilisto.balance.
- 5.6 Unless vilisto exercises the right of withdrawal with regard to the contract relating to vilisto.balance as set out in section 5.5 of these GTCs vilisto.balance, the customer's obligations under this contract shall continue until its termination.

## **6. Warranty for defects, liability of vilisto**

- 6.1 vilisto shall be liable for material defects and defects of title in accordance with the applicable statutory provisions, in particular sections 536 et seq. BGB, unless otherwise stipulated in vilisto's offer, the order form or hereinafter.
- 6.2 The (technical) information provided by vilisto about vilisto.balance on the website, in data sheets, brochures and similar documents shall be for descriptive purposes only. vilisto does not assume any guarantee in this respect, and this shall also not be deemed a warranted characteristic or a quality agreement. vilisto accepts no liability for public statements made by third parties.
- 6.3 If defects, malfunctions or damage occur during the term of the contract, the customer shall notify vilisto immediately after becoming aware of them. vilisto shall remedy the defect within a reasonable period of time. If no immediate notification is made, the customer shall bear the resulting disadvantages.
- 6.4 The failure of individual vilisto radiator thermostats at the customer's location, which is specified in the order form agreed between vilisto and the customer and at which the radiator thermostats and gateways of a vilisto heating control system are installed, regardless of the cause, has no significant effect on the functionality of vilisto.balance, provided that the proportion of failed vilisto

radiator thermostats does not exceed 10% of the total number of vilisto radiator thermostats installed and shall therefore not constitute a defect.

- 6.5 The no-fault warranty liability of vilisto due to initial material defects shall be excluded. In this respect, vilisto shall only be liable in the event of gross negligence or intent.
- 6.6 Liability on the part of vilisto for such material defects and defects of title as well as damages for which the customer or its vicarious agents are responsible shall be excluded.
- 6.7 The customer's right of cancellation due to non-provision in accordance with section 543 (2) sentence 1 no. 1 BGB shall be excluded, unless the provision of the service is to be regarded as permanently failed.
- 6.8 Claims for damages by the customer in other respects, including those arising from pre-contractual obligations and tort, may only be asserted if they are
- a) based on intent or gross negligence on the part of vilisto or vilisto's vicarious agents, or
  - b) on the slightly negligent breach of a material contractual obligation which is essential for achieving the purpose of this contract, or on the breach of obligations whose fulfilment is essential for the proper execution of this contract and on whose fulfilment the customer may rely (cardinal breach of duty), by vilisto or vilisto's vicarious agents, or
  - c) is based on a negligent breach of duty by vilisto resulting in injury to life, limb or health or on an intentional or negligent breach of duty by vilisto's vicarious agents resulting in injury to life, limb or health, or
  - d) on the absence of a guaranteed or warranted characteristic of the devices, or
  - e) on mandatory statutory liability of vilisto or vilisto's vicarious agents (e.g. under the Product Liability Act).

In the event of a breach of a material contractual obligation within the meaning of section 6.8 letterb) of these GTCs vilisto.balance, liability for slight negligence shall be limited to compensation for foreseeable damage typical for this type of contract.

- 6.9 Notwithstanding section 6.8, the liability of vilisto or vilisto's vicarious agents shall be limited to intent and gross negligence for damage caused in connection with the provision of vilisto's services free of charge.
- 6.10 The customer may only assert claims for reduction if they are based on legally established or undisputed claims. The customer's claims for reimbursement pursuant to section 812 BGB shall remain unaffected.
- 6.11 Due to the strong dependence of heating costs on various factors beyond vilisto's control (e.g. weather, insulation, ventilation behaviour, selected target temperature settings), vilisto accepts no liability for the customer's heating costs.
- 6.12 Any exclusions and limitations of liability contained in these GTCs vilisto.balance shall also apply in favour of vilisto's vicarious agents.
- 6.13 Any exclusions and limitations of liability contained in these GTCs vilisto.balance shall not apply to direct damages resulting from injury to life, limb or health. In this respect, vilisto shall be liable without limitation in the event of intent and negligence (also on the part of vilisto's vicarious agents).
- 6.14 vilisto shall only be liable for damages, i.e. damages of the customer that are the direct result of actions for which vilisto can be held liable in accordance with these GTCs vilisto.balance.

## 7. Maintenance

The provisions in section 2 of the GTCs Maintenance and Online Platform and in the vilisto Maintenance service description shall apply mutatis mutandis to the maintenance of vilisto.balance.

## 8. Customer data

The provisions in sections 6 and 7 of the GTCs Maintenance and Online Platform shall apply mutatis mutandis to the use and processing of customer data in connection with the use and activation of vilisto.balance.

## 9. Force majeure

- 9.1 The term **"force majeure"** shall include any event beyond vilisto's control which prevents vilisto from fulfilling its obligations to the customer in whole or in part (e.g. forces of nature, natural events, natural disasters, riots, strikes, civil unrest, disturbances, riots, lockouts, war, military actions or mobilisations, sabotage, explosions, pandemics, epidemics, quarantine, border closures, governmental, official or sovereign orders or interventions or other events beyond vilisto's control). Supply difficulties and other service disruptions at vilisto's suppliers or subcontractors shall be deemed force majeure if the supplier or subcontractor is prevented from performing its obligations by an event within the meaning of the foregoing.
- 9.2 vilisto shall notify the customer immediately of the occurrence and cessation of force majeure and shall use its best endeavours to remedy the force majeure and to limit its effects as far as possible.
- 9.3 In the event of force majeure, vilisto shall be released from its obligations to the customer for the duration and to the extent of the effects of the force majeure. In particular, vilisto shall not be liable for impossibility or delays in the fulfilment of obligations towards the customer or for damages insofar as these are based on force majeure.
- 9.4 In the event of force majeure, vilisto and the customer shall agree on how to proceed and, if necessary, adjust the contract in good faith and with due regard to the interests of both parties (e.g. with regard to agreed performance times, dates or deadlines). If the force majeure lasts for more than six (6) months or if the contract adjustment is economically unreasonable for one party, both vilisto and the customer shall be entitled to terminate the contract in writing, i.e. in written or text form (e.g. letter, e-mail, fax) to the contact details stated in the contract or offer. The right to extraordinary cancellation for good cause shall remain unaffected.

## 10. Possibility of selling receivables, transfer of customer-related data, taking necessary/appropriate measures, credit information

- 10.1 Without this already being associated with a notice of assignment pursuant to section 409 BGB or a similar declaration, The customer is aware that,
  - a) that vilisto may sell any (in particular all present and future, conditional and unconditional) receivables arising from the contract between vilisto and the customer in whole or in part to third parties, whereby this may be done, for example, by way of individual or several sales of receivables, assignments (e.g. also assignments by way of security to banks financing vilisto) or in any other manner (hereinafter **"sale of receivables"**), and
  - b) that vilisto may enter into further agreements under the law of obligations and in rem, make and receive declarations or take other measures and actions necessary or deemed expedient in connection with such sale(s) of receivables.
- 10.2 The customer is furthermore aware that vilisto is entitled to assert claims against the third party in connection with one or more sales of receivables within the meaning of section .1 lit. a) of these GTCs vilisto.balance and/or in connection with agreements, declarations, measures and actions within the meaning of section 1 lit. b) of these GTCs vilisto.balance, to provide the third party/parties with the information necessary to assert the assigned claims and to deliver the documents serving as evidence of these receivables (section 402 BGB). The customer expressly agrees to this provision of information and delivery of documents, even if and to the extent that the information and documents contain personal data within the meaning of the German General Data Protection Regulation (GDPR). The aforementioned consent of the customer shall remain valid until revoked by the customer. The customer may revoke this consent at any time in the future without stating reasons by telephone, in writing or by email (email address: [datenschutz@vilisto.de](mailto:datenschutz@vilisto.de)).

- 10.3 If and to the extent that customer declarations, measures or actions become necessary or expedient in connection with one or more sales of receivables within the meaning of section 10.1 letter a) of these GTCs vilisto.balance and/or in connection with agreements, declarations, measures and actions within the meaning of section 10.1 letter b) of these GTCs vilisto.balance, the customer shall, upon request by vilisto, immediately issue and take such declarations, measures or actions, unless this is unreasonable for the customer in exceptional individual cases.
- 10.4 The customer is aware and agrees that vilisto and/or third parties (e.g. banks financing vilisto) may obtain one or more credit reports regarding the customer.

## **11. Final provisions**

- 11.1 The customer shall only be entitled to set-off rights and rights of retention if the counterclaim to which they are entitled has been legally established, is undisputed or has been recognised by vilisto. Rights of retention on the part of the customer shall be excluded insofar as they are not based on the same contractual relationship.
- 11.2 The contract and any disputes arising in connection therewith shall be governed exclusively by German law to the exclusion of the UN Convention on Contracts for the International Sale of Goods.
- 11.3 If the customer is a merchant within the meaning of the German Commercial Code (HGB), a legal entity under public law or a special fund under public law, the place of jurisdiction for any disputes arising from or in connection with the contract shall be Hamburg. Overriding statutory provisions, in particular those relating to exclusive jurisdiction, shall remain unaffected. vilisto shall remain entitled to bring legal action at the customer's registered office.
- 11.4 Should individual provisions be or become invalid or unenforceable, this shall not affect the validity of the remaining provisions.

# Service description vilisto.balance

## 1. Introduction

vilisto provides its customers with adaptive hydronic balancing together with the services described below. The adaptive hydronic balancing provided (also known as "**vilisto.balance**") is offered as an additional function of the vilisto heating control system and is executed on the vilisto radiator thermostats using software. vilisto.balance is an intelligent, self-learning solution for the automated implementation and optimisation of hydronic balancing in buildings with water-based heating systems that are equipped with vilisto radiator thermostats. vilisto.balance automatically adapts the hydronic balancing to the respective load situation of the building and other dynamic operating conditions of the building.

## 2. Aim of the service

Adaptive hydronic balancing optimises heat and load distribution in the building by continuously monitoring room temperatures and adjusting the system parameters in real time. vilisto.balance enables:

- **Optimisation of heat distribution** in all radiators in the building,
- **Energy savings** through demand-based control\*,
- **Increased comfort** for room users through improved temperature control in every room.

\* This may require additional settings or adjustments to the heat supply, heating system or system technology, which are expressly not part of this service description.

## 3. Process classification, Certification

Adaptive hydronic balancing was developed along German standard DIN 94679-4 "Hydraulic systems in heating, cooling and ventilation systems. - Part 4: Temperature-based alternatives to hydronic balancing". The method used by vilisto.balance is at least equivalent to hydraulic balancing according to method B in accordance with technical rule of the German Central Association for Sanitary, Heating and Air Conditioning (ZVSHK) "Optimisation of heating systems in existing buildings", VdZ - Wirtschaftsvereinigung Gebäude und Energie e.V., 1st updated new edition April 2022, number 4.2. with regard to section 60c (3) German Buildings Energy Act (GEG). While these references are based on German regulations and standards, the applied method meets high performance and efficiency requirements. The certificate can be viewed at <https://www.vilisto.de/impressum/dokumente/>

## 4. Prerequisites

- 4.1. **vilisto radiator thermostats.** In order to use and activate vilisto.balance, the building to be balanced must be equipped with vilisto radiator thermostats from model variant ovis2020 onwards, and vilisto.balance must have been commissioned for all of these vilisto radiator thermostats. If the building to be balanced is not equipped with a significant number of more than 90% vilisto radiator thermostats (also known as "**full equipment**"), the functionality of vilisto balance may be significantly restricted and therefore cannot be ensured.
- 4.2. **vilisto Online Platform.** In order to use and activate vilisto.balance, it is necessary that the vilisto radiator thermostats installed in the building are connected to the vilisto Online Platform regarding a vilisto heating control system. It is necessary that an active contractual relationship exists with the customer for the provision of the Online Platform to the customer, as adaptive hydronic balancing is an additional function of the vilisto heating control system.
- 4.3. **Connection status.** To use and activate vilisto.balance, it is necessary for the installed radiator thermostats to have an active connection ("online" status) with the vilisto servers. Individual thermostats that do not have a connection to the vilisto servers do not affect the result of the hydronic balancing.

## 5. Performance characteristics

- 5.1. **Mode of operation.** vilisto.balance optimises the heat supply to the radiators by limiting the maximum stroke of the radiator valves, thereby harmonising the heating speeds of all radiators and, accordingly, all rooms in a building to be balanced. In doing so, vilisto.balance relies on continuous self-learning control ("adaptive" balancing). An intelligent algorithm continuously determines the necessary valve stroke limits of the radiator thermostats of the vilisto heating control system for optimum balancing by recording relevant measured variables (e.g. room temperature, valve position, etc.) in the entire heating system. The measured variables are



recorded by the vilisto radiator thermostats present in the building to be calibrated. This is an adaptive adjustment to different building conditions, outside temperatures and usage conditions and thus correspondingly dynamic load conditions of the building and individual rooms to be balanced. The intelligent control automatically recognises and compensates for over- or undersupply of individual radiators. This ensures even heat distribution without the need for manual readjustment.

- 5.2. **Activation.** vilisto.balance can be provided remotely by vilisto activating the software for the vilisto radiator thermostats installed in the building to be balanced. An inspection of the building, manual settings on the valves or radiators or other activities on site in the building to be balanced are not necessary. As vilisto.balance is based on the existing vilisto heating control system in the building to be balanced, no additional building data acquisition or detailed documentation of the heating system is required. The system can be integrated directly into ongoing operation and starts optimising the heating system without any time-consuming preparations.
- 5.3. **Update interval.** vilisto.balance adapts to the respective load situation in the building. The system settings for valve stroke limitation can be adjusted at any calculation time interval (usually every minute). However, the settings are only adapted if the algorithm recognises that there is an under- or oversupply of the radiator and an adjustment is actually necessary. As a rule, settings are automatically adjusted approximately every 15 minutes.
- 5.4. **Sensitivity.** The intelligent algorithm offers the option of converging to a hydraulically balanced heating system with varying degrees of sensitivity or aggressiveness. The customer has no way of influencing this, but vilisto is able to change these sensitivities if adjustments are required. The algorithm is designed to work in a wide variety of building, heating and hydraulic situations. However, it cannot be ensured that all situations encountered can be optimally covered without adjusting the sensitivities. Therefore, in individual cases, the configuration of the algorithm may need to be adjusted manually by vilisto. This possibility is covered by the certificate mentioned in section 3 of this service description. The settings made by vilisto are included in the service purchased.
- 5.5. **Specialist contractor declaration.** With the use of vilisto.balance, the customer receives a specialist contractor declaration from vilisto as well as proof of the certification of adaptive hydronic balancing mentioned section 3 of this service description. These documents prove compliance with section 60c (3) GEG.

## 6. Service Level Agreement (SLA)

Availability, service times and maintenance work regarding vilisto.balance are based on the corresponding specifications regarding the vilisto radiator thermostats and the vilisto Online Platform and are regulated in the General Terms and Conditions "Maintenance of a vilisto heating control system and provision of an Online Platform".

## 7. Services not included, liability

- 7.1. **Optimisation of system technology.** vilisto.balance does not make any adjustments to other system technology. In particular, adjustments to the heating system or heat supply, changes to the settings of pumps or other system technology are not part of this service description. vilisto recommends optimising the system technology after and during the adaptive hydronic balancing process. In this way, significant energy savings can be achieved; in particular by adjusting the pump pressures and the flow temperature. vilisto can make recommendations to the customer regarding settings on the systems based on the data generated with vilisto.balance. If optimisation of the systems is desired, this must be ordered separately from vilisto.
- 7.2. **Inadequate conditions on the radiator and valve.** The vilisto radiator thermostats are installed on the existing radiator valves in the building to be balanced so that vilisto.balance also works with the radiator system (in particular valve type and setting) in place at the time of installation of the vilisto radiator thermostats. vilisto does not guarantee or accept any liability whatsoever that a radiator that was defective prior to the installation of the vilisto radiator thermostats and/or prior to the activation of vilisto.balance will no longer be defective or will function better after the installation of the vilisto radiator thermostats and/or activation of vilisto.balance. This refers in particular, but not exclusively, to radiator valves and radiators that
  - cannot be moved due to calcification of the valve or for other reasons, thereby restricting the heating output of the radiator;

- are equipped with so-called "presettable valves" and have a setting that limits the heating output of the radiator to such an extent that even after activation of vilisto.balance, it is not possible to improve the function and supply of the radiator;
- are not correctly connected to the piping network (e.g. flow and return are reversed, return screw connection is shut off, etc.).

If, prior to using and activating vilisto.balance, the customer wishes vilisto to set presettable valves to the highest level so that the maximum possible valve strike can be used for vilisto.balance, this requires a separate order to vilisto. The costs for this can depend greatly on whether the use and activation of vilisto.balance is to take place at the same time as the new installation of vilisto radiator thermostats, or whether vilisto radiator thermostats are already installed in the building to be balanced.

- 7.3. **Inadequate conditions in the system technology.** vilisto assumes no guarantee or liability for the full functionality of vilisto.balance if the settings on or the basic dimensioning of the heating system or heat supply are insufficient to provide enough heat in the building to be balanced so that all rooms reach their target temperatures when heated. For optimisation of such a situation, please refer to section 7.1.

Similarly, vilisto accepts no liability for failures due to faults in the customer's heating or cooling system that were not caused by the service provided.

## 8. Advanced functions

vilisto reserves the right to develop and offer additional functionalities that go beyond this service description. Customers will be informed accordingly. vilisto reserves the right to provide services and functionalities that go beyond this service description separately as a chargeable service. Any services and functionalities that go beyond this service description, which are offered and activated free of charge, are provided by vilisto on a voluntary basis and may be deactivated at any time at vilisto's discretion or provided as a paid service in the future.

## 9. Static hydraulic balancing

- 9.1. **Offer.** Subject to a deviating individual contractual agreement between vilisto and the customer, vilisto generally does not offer static hydronic balancing. It is expressly pointed out that static hydraulic balancing may result in significant losses in heat supply, comfort and potential energy savings compared to adaptive hydraulic balancing and therefore does not meet vilisto's standards of performance and quality.

- 9.2. **Functionality, requirement for adaptive hydronic balancing.** Static hydronic balancing balances the heating system to a load point (e.g. minimum design external temperature, maximum load, etc.). This means that although the hydraulic system of a building is balanced, the balanced load point is only very rarely actually reached (e.g. at -12°C outside temperature). The heating system therefore operates for most of the time in partial load mode relative to the operating point of the balancing. This results in comfort and energy efficiency potential that cannot be utilised with static balancing, as the radiators are oversupplied most of the time. Static hydronic balancing is also set on the basis of a one-time calculation procedure.

If energy efficiency measures are carried out on or in the statically balanced building (examples: installation of intelligent radiator thermostats, insulation of the building envelope, window replacement, heating system replacement, etc.), the hydraulic system usually needs to be re-calibrated. In practice, this rarely takes place, as conventional balancing methods require a lot of manual work, with the result that the existing hydraulic system is no longer optimally adjusted and comfort and energy efficiency may be reduced. For this reason, in the course of many such energy efficiency measures, a new hydronic balancing is required by Dutch law. Due to the high manual effort involved, this can again result in high costs. These costs, which may arise several times over the service life of the building for each hydronic balancing required, are generally not incurred with adaptive hydronic balancing, as the algorithm automatically adapts to changing conditions.

When using conventional, non-digital radiator thermostats, a building is often at a relatively constant load point, as all rooms are continuously regulated to the same temperature. Only external factors such as the outside temperature, solar radiation, etc. as well as internal factors such as a night-time temperature reduction have an influence on this. By using demand-based control of the radiators, e.g. by using digital, presence-based vilisto radiator thermostats, the

load point of the heating system changes constantly, as each room is heated according to local requirements (e.g. room usage). Due to this constant shift in heat demand, it is essential for optimising the heating system that the hydraulic system also reacts dynamically to the respective load situation. By its very nature, static hydronic balancing cannot fulfil this sufficiently - adaptive hydronic balancing, on the other hand, can.

- 9.3. **Implementation of static balancing.** Although vilisto expressly does not recommend this, it is possible to switch the vilisto system to a static setting after a longer period of operation in adaptive mode. For this purpose, the load points and corresponding valve stroke limits are recorded at standard design outdoor temperatures over the duration of the adaptive balancing operation; or if these outdoor temperatures did not prevail during the operating period, they are estimated or calculated and applied when switching to static hydronic balancing. The maximum valve stroke limits are therefore set statically and no longer changed adaptively.